# THE DEVELOPMENT OF ENVIRONMENTAL EDUCATION RESOURCE MATERIALS FOR JUNIOR PRIMARY EDUCATION THROUGH TEACHER PARTICIPATION: THE CASE OF THE WE CARE PRIMARY PROJECT

**DISSERTATION**

Presented for the Degree of

**DOCTOR OF EDUCATION**

at the University of Stellenbosch.

Promoter: Associate Professor D.R. Schreuder



by

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September 1996

# DECLARATION

I, the undersigned, hereby declare that the work contained in this dissertation is my own original work and has not previously in its entirety or in part been submitted at any university for a degree.

Signature: Date:


**The We Care Primary Materials**

# ABSTRACT

The We Care Primary project is a participatory materials development research project, grounded through a socio-historical location of the research question in the assumptions and ideals of the critical inquiry paradigm and socially critical environmental education. This research represents *an attempt to clarify the assumptions and orientations of socially critical environmental education as a possible 'tangible alternative' to modernist models of environmental education and educational change in a South African context.*

Through this project environmental education materials development emerged *as a reflexive and responsive process of change* in which I was able to work *with* teachers *with in* local contexts to develop resource materials which may contribute to the development of quality education and the transformation of the junior primary school phase. The emerging central thesis of this report is an ongoing questioning of the notion of participation, and *a realisation of the complexities of establishing conditions for authentic participation* in materials development, curriculum development and research contexts.

*Phase one* of this research report describes a journey of inquiry *towards* socially critical environmental education. This phase portrays a growing understanding of environmental education and is focused on the development of a participatory orientation to materials development. *Phase two* of this research journey illustrates a critical and reflexive stance to the 'weaknesses' identified in the first phase of the project. The interdependence of curriculum development, materials development and in service teacher education is explored. This phase of the research is presented as a journey *with in* socially critical environmental education and reflects ongoing praxis and engagement *with in* the assumptions of critical theory and socially critical environmental education. In *phase two and three,* the development of a critically reflexive stance to the assumptions guiding this study is described, and a shift in possible research orientations is highlighted. Further possibilities for research journeys *beyond* socially critical environmental education are presented in *phase three* through a tentative critique of the first two phases of this research project.

This research report offers a brief insight into some of the complexities of change in the formal education sector. It demonstrates that confronting the challenges and complexities of change in realistic and meaningful ways is possibly one of the most daunting realities facing South Africans as we begin to respond to the many legacies of apartheid ideologies, modernisation, a history of mis-education and poor education, decades of social separation and increasing socio-ecological degradation and risk.

# SAMEVATTING

Die Ons Gee Om Primêr-projek is 'n navorsingsprojek in deelnemende hulpbronontwikkeling, gegrond op die sosio-historiese plasing van die navorsingsvraag binne die aannames en ideale van die kritiese navorsingsparadigma en sosiaal-kritiese omgewingsopvoeding. Die navorsing verteenwoording *'n poging om die aannames en orientasies van sosiaal-kritiese omgewings-opvoeding as moontlike 'tasbare alternatief' vir modernistiese modelle van omgewings-opvoeding and opvoedingsverandering binne 'n Suid Afrikaanse konteks te verklaar.*

Deur hierdie projek het hulpbronontwikkeling na vore gekom as 'n refleksiewe en responsiewe proses van verandering, waardeur ek *met* onderwysers kon werk *met in* plaaslike kontekse om hulpbronmateriaal te ontwikkel wat moontlik kan bydra tot die ontwikkeling van die kwaliteit van opvoeding en die transformasie van die junior primêre skoolfase. Die sentrale tese van hierdie verslag is 'n voortdurende bevraagtekening van die idee van deelname, *en 'n besef van die kompleksiteite daarvan om toestande te skep wat ware deelname verseker* in hulpbron-ontwikkeling, kurrikulumontwikkeling en navorsingsverbande.

*Fase een* van hierdie navorsingsverslag beskryf 'n reis van ondersoek op weg *na* sosiaal-kritiese omgewingsopvoeding. Dié fase skets 'n toenemende begrip van omgewingsopvoeding en fokus op die ontwikkeling van 'n deelnemende orientasie tot hulpbronontwikkeling. *Fase twee* van hierdie navorsingsreis illustreer 'n kritiese en refleksiewe houding ten opsigte van die 'swak plekke' wat in die eerste fase geïdentifiseer is. Die interafhanklikheid van kurrikulum-ontwikkeling, materiaalontwikkeling and die indiensopleiding van onderwysers word ondersoek. Hierdie fase van die navorsing word voorgestel as 'n reis *met in* sosiaal-kritiese omgewings-opvoeding en weerspieël voortdurende praksis en 'n betrokkenheid by die aannames van kritiese teorie en sosiaal-kritiese omgewingsopvoeding. In *fases twee en drie* word die ontwikkeling van 'n krities-refleksiewe houding ten opsigte van die aannames van hierdie studie beskryf, en 'n verskuiwing in moontlike navorsingsorientasies word uitgelig. Verdere moontlikhede vir navorsingsreise *verby* sosiaal-kritiese omgewingsopvoeding word in *fase drie* uitgewys deur 'n tentatiewe kritiek op die eerste twee fases van die navorsingsprojek.

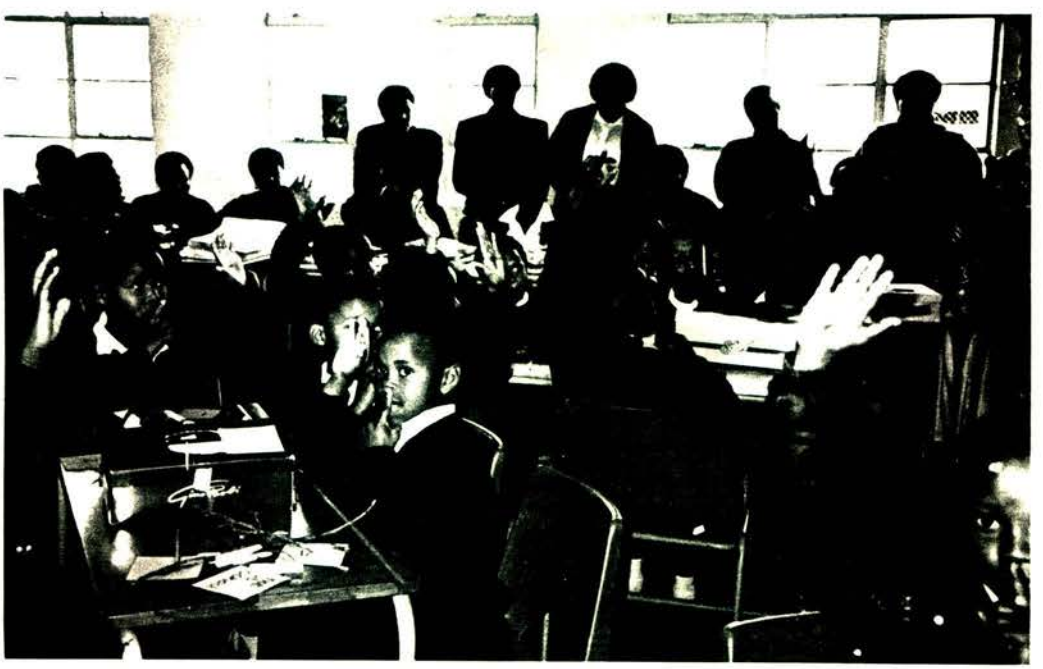
Hierdie navorsingsverslag bied 'n vlugtige kykie na van die kompleksiteite van verandering in die formele onderwyssektor. Dit wil blyk dat 'n realistiese en betekenisvolle reaksie op die uitdagings en kompleksiteite van verandering moontlik een van die gedugste realiteite is waarmee Suid-Afrikaaners te kampe het in ons pogings om te reageer op die vele nalatings van apartheidsideologieë, modernisasie, 'n geskiedenis van wanopvoeding en swak opvoeding, dekades van sosiale skeiding en toenemende sosio-ekologiese degradasie en risiko's.

## *This work is dedicated to*

*The honourable memory of my beloved late grandfather, Herbert Gould Porter, who gave his life to the wisdoms of humility and love. Through his example, encouragement and support this work was made possible. He died before he could read the final version.*

*My parents and family who have been my constant companions along this journey. Through this work I thank them for the many ways in which they helped me prepare for this journey. They helped me believe in myself, find my way when I was losing direction and were always willing to buy extra tickets, carry the luggage and answer phone calls along the way. I thank them mostly for believing* ***with*** *me in the possibility of making a difference.*

*The many children who enter our schools with the hope and vision that education will bring a better future. It is my wish that this work will make a contribution towards making that vision and hope real.*



# ACKNOWLEDGEMENTS

Acknowledgements begin with the many teachers whom I have met and worked with over a four year period whilst working on this project. I hope that the privilege that was mine and the richness of discussion and interaction which I shared with some of South Africa's most committed junior primary teachers is in some way reflected in the pages that follow.

My gratitude goes to Dr Danie Schreuder, my supervisor, for having faith in me, and for creating opportunities in which I was free to learn, to explore new ideas and to grapple with the experience of discovering a whole new world of educational knowledge, research experience and social understanding. Perhaps the greatest opportunity this study has offered me is the chance to play a small role in the reconstruction and transformation of our society. Through this process I have been afforded the opportunity to learn to know my fellow South Africans, and for that I am grateful. I also thank him for sound advice and his keen sense of grounding theory within good practice. This guidance has helped to make this project practical, dynamic and able to contribute to change in classrooms around the country.

The ongoing development and trialing of the We Care Primary pilot materials was made possible thanks to the support of TOTAL (SA) and WWF (SA). Extensive financial assistance from Juta & Co. Ltd is greatly appreciated, as is the vision and commitment of Ulla Schreuder and Johann Potgieter who supported the ongoing research, development and publishing of the materials. Annalie Greeff and Wayne Osmond are thanked for the many hours they have spent refining the materials for publication. Without the support of the Juta marketing staff, much of what took place during this research project would not have been possible.

Early development work on the We Care materials is credited to the initiative and vision of Rob Soutter and Danie Schreuder. The development work for these materials included lecturers and students at the Colleges of Education: Cape Town, Johannesburg and Barkly House. Gertie Smit and Ed Chantler are gratefully acknowledged as being the originators of the We Care Early Years materials, later redeveloped to form the We Care Primary pilot materials.

Jim Taylor and the Share-Net staff are gratefully acknowledged for taking over the co-ordination of the printing, trialling and dissemination of the We Care Primary pilot materials. Their commitment to environmental education networking and sharing is visible throughout this research report.

I owe an intellectual debt to Rob O'Donoghue, Eureta van Rensburg and Razeena Wagiet for the many hours of informal guidance, help and support they gave me through many floundering attempts at reaching clarity on understanding the complexities of environmental education research. I thank Ina De Lange for sharing this process with me.

I acknowledge gratefully the wide-ranging contributions of many friends and colleagues and especially Jean Baxen, Nthuseng Tsoeu and Mbuyi Mhlauli, who have spent many hours working with me on this project, and have helped to shape it through their interest and commitment to quality education in the junior primary school phase.

For those of us who write, whether for posterity or just for tomorrow, we have in mind some kind of distant jury for whom we write. This work has been written for the children of tomorrow, for the teachers of today, and for students who, like me, will enter the world of environmental education research as strangers, hoping to find their way along a chosen pathway. For those whose written work has guided me, I thank you, and hope that I have done justice to the intent of your thoughts in this work. Completing a study of this nature compels one to consult the writings of many, and in the construction of this thesis, I have been especially grateful for the supporting and guiding works of Rob O'Donoghue, Eureta Janse van Rensburg, Ian Robottom, John Fien, Paul Hart, Rob Stevenson, Melanie Walker, Sue Davidoff, Maureen Robinson, Michael Fullan and Patti Lather. I am also grateful to the wisdom and insight encountered in the work of the poet T. S. Eliot, much of which has guided the conceptual structure and nature of this research report.

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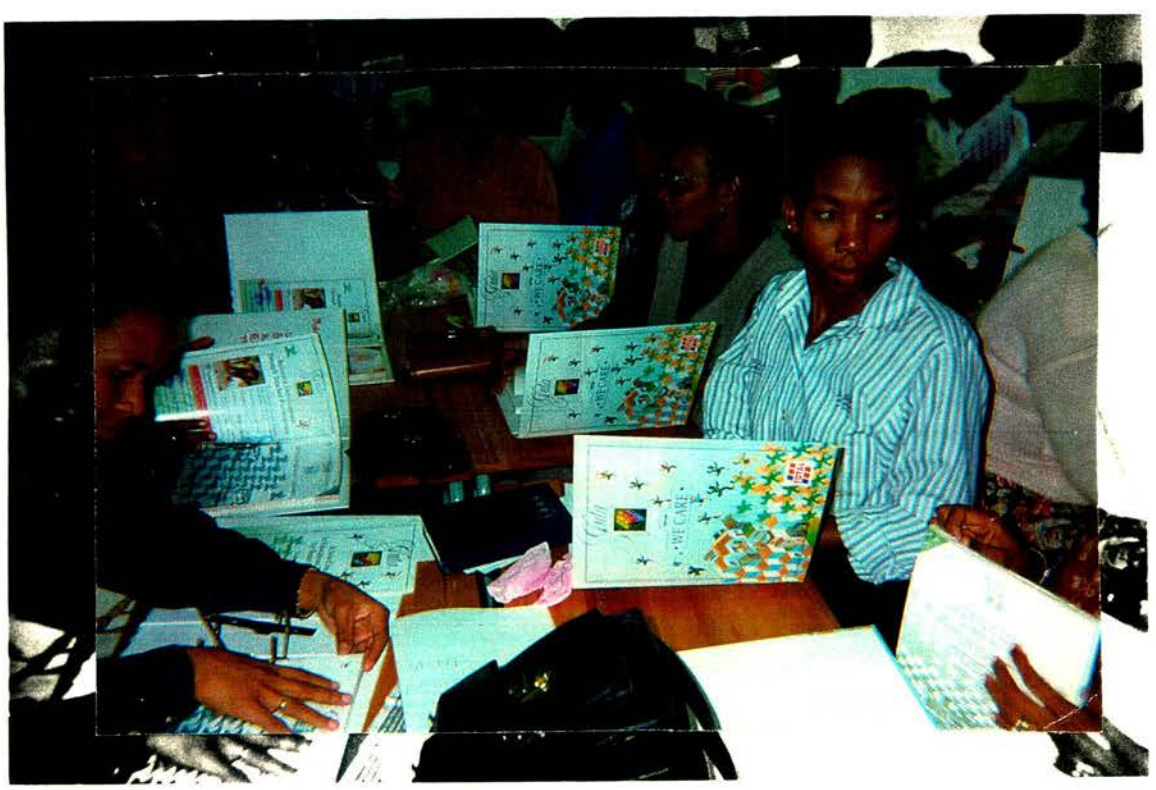

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## ***To do research ...*** *(my title)*

*To communicate with Mars, converse with spirits,*
*To report the behaviour of the sea monster,*
*Describe the horoscope, haruspicate or scry.*
*Observe disease in signatures, evoke*
*Biography from the wrinkles of the palm*
*And tragedy from fingers; release omens*
*By sortilege, or tea leaves, riddle the inevitable*
*With playing cards, fiddle with pentagrams*
*Or barbituric acids, or dissect*
*The recurrent image into pre-conscious terrors -*
*To explore the womb, or tomb, or dreams; all these are usual*
*Pastimes and drugs, and features of the press:*
*And always will be, some of them especially*
*When there is distress of nations and perplexity*
*Whether on the shores of Asia, or in the Edgware Road.*
*Men's curiosity searches past and future*
*And clings to that dimension. But to apprehend*
*The point of intersection of the timeless*
*With time, is an occupation for the saint -*
*No occupation either, but something given*
*And taken, in a lifetime's death in love,*
*Ardour and selflessness and self-surrender.*
*For most of us, there is only the unattended*
*Moment, the moment in and out of time,*
*The distraction fit, lost in a shaft of sunlight,*
*The wild thyme unseen, or the winter lightning*
*Or the waterfall, or music heard so deeply*
*That it is not heard at all, but you are the music*
*While the music lasts. These are only hints and guesses,*
*Hints followed by guesses; and the rest*
*Is prayer, observance, discipline, thought and action.*

(From The Dry Salvages IV by T.S. Eliot)

# CHAPTER 1

## AN OVERVIEW OF THE STUDY

*So here I am, in the middle way, having had twenty years -*
*Twenty years largely wasted, the years of* ***l'entre deuz guerres -***
*Trying to learn to use words, and every attempt*
*Is a wholly new start, and a different kind of failure*
*Because one has only learnt to get the better of words*
*For the thing one no longer has to say, or the way in which*
*One is no longer disposed to say it. And so each venture*
*Is a new beginning, a raid on the inarticulate ...*

(From East Coker V, T.S. Eliot)

### 1.1 RESEARCH AS JOURNEY

Every day teachers and students around the globe gather together in classrooms, lecture theatres, community centres, libraries and other places to learn. Each of them, teacher and student alike, brings with them experiences and understandings that are theirs alone. Yet, collectively they are embarking on a journey that they will come to share with others. In this work, I wish to share with you, the reader, one such journey to which I bring experiences and understandings which are my own as well as the collective experience of other travellers whom I met along the way. I too, have gathered in many places of learning over the past four years to teach and learn, and, through exploring my role as both teacher and learner, have had the opportunity to encounter a rich diversity of interrelated experiences whilst doing research.

Travellers normally prepare for the adventures they hope to have, but the itineraries, maps and plans in themselves do not create their journeys. A journey is an experience, lived just as it turns out to be: moment by moment, day by day, month by month, event by event. Preparing for each part of the journey involves making decisions, designing plans, and outlining key strategies to help set directions for the coming adventures. In this thesis I hope to share some of the decisions,

plans and strategies I made for this journey, and therein describe some of the directions, encounters, experiences and reflections which became part of an ongoing voyage of lived experience[1], inquiry and learning. Reinharz (1992:195) suggests that learning should occur on three levels in any research project: "... the levels of person, problem and method". This report of my journey will document how I have learned about myself, about environmental education, about environmental education materials development with teachers, and about how to conduct research.

Some travellers keep diaries, which I too have done, recording actual situations that took place in workshops and meetings during the ongoing process of questioning, challenging, changing and shaping assumptions and theories about environmental education. A range of travel documents (research literature), critical dialogue and encounters with fellow travellers has helped me to understand actual situations, and better interpret and direct the processes of questioning and interpretation which are central to any research project. By using excerpts and interpretations of these recordings, I hope to illustrate some of the struggles, successes and social processes involved in doing environmental education research.

## 1.2 A BRIEF INTRODUCTION TO THE WE CARE PRIMARY MATERIALS DEVELOPMENT PROJECT

This research report documents the development of the We Care Primary project over a period of four years. The We Care Primary project is essentially an environmental education materials development project, but has grown to encompass aspects of curriculum development and in-service teacher education (INSET). In this research report frequent reference is made to the We Care Primary project, a description which encompasses the full extent of the project activities, including the research process. Although the We Care Primary project was initiated in 1987 and was then known as the We Care project (which essentially referred to a set of We Care materials for the junior secondary school phase), it has since become mainly a materials development

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[1] Malone (1994:30) refers to participatory research as 'lived experience' and quotes from Jackson (1989:2) to clarify lived experience as a phenomenon which "... accommodates our shifting sense of ourselves as subjects and objects, as acting upon and being acted upon by the world".

initiative concerned with the development of materials for the junior and pre-primary school phases, and is described as such in this research report. Throughout this report distinctions are made between the We Care Primary pilot materials (referring to a set of materials developed in draft form for trialing and testing), the We Care Primary materials (referring to the re-developed and published version of the We Care Primary pilot materials), and the We Care Primary project packs (referring to ongoing materials developed as an extension of the We Care Primary materials). Figure 2.3 on page 49 shows how these different materials developed between 1987 and 1995. For the purposes of this research report reference to the We Care Primary project represents all those activities and encounters which have collectively contributed to the development and use of these different sets of We Care Primary materials since 1991, which indicates the 'start' of this research project.

## 1.3 TAKING EXPLICIT ACCOUNT OF MY TEXTUAL PRACTICE

> *Until qualitative researchers (who are writers?) are able to articulate the possibilities for reading within their texts and readers of qualitative texts are experienced in expecting these possibilities, the former are going to have to provide some explicit guidelines to sense making* (Meloy 1994:69).

My exploration of what it means to write research is visible in the forthcoming pages, and is grounded in the arguments of Meloy (1994:69, cited above) and Atkinson (1991:163-4) who writes that "... the writing up of qualitative research is a[n] ... extensive and pervasive feature of the research process ... writing is an integral feature of the research enterprise ... [it] begins and ends in writing". The textual construction of qualitative research goes far beyond the problems of producing serviceable thesis drafts. In emphasising different aspects of writing the text, Atkinson (1991:168-73) points out that:

> ... the student should understand that writing encompasses methodological and analytic strategies ... It must become part of our reflexive self-awareness that we recognise the rhetorical and stylistic conventions with which we deal ... in order to bring it within our explicit methodological and epistemological understanding ... The academy may need to be more open to ... theses in which textual experimentation is a major *raison d'etre*, [and] cannot treat them as less important than any other methodological concerns.

Sherman (1993:235) supports Atkinson's views and states:

> Writing is crucial to qualitative research because this kind of research rests on *descriptions* and *narrations*, rather than on quantification of data. Its aim is to *present*, not represent experience; its target is *complete* (or *holistic*) accounts, hence it is ***discursive or lengthy and complex in its discourse*** (my emphasis). Its goal is to *persuade*, rather than to validate.

For the qualitative researcher, doing research is synonymous with fulfilling multiple, simultaneous roles. The researcher as participant in the research process (see 3.3.5.6 and 4.3.5) is a methodologist, analyst, writer, thinker, interpreter, inquirer and co-learner and is the individual who, through social interaction and the sharing of data and written text with research participants, is responsible for some kind of final, organised presentation of the interaction of experience in context (Meloy 1994:69). The style followed in this research report may seem unconventional to some readers as it encompasses: the use of metaphor as a textual convention; a reflexive interest in discursive practice and new fictive techniques; representation of text as socially constructed and partial, and a view of text as a mechanism for developing voice through research. It has been developed to clarify and illuminate the research process as an *extensive, interactive and complex process*, rather than a set of rationally proven conclusions.

### 1.3.1 Using metaphor as a textual convention

In this thesis I have made use of symbolic imagery, or metaphor, as a textual convention. The use of 'journey' as a metaphor for this study, is a way of describing and capturing the research process over time, the events or moments within this process, and the changing directions and particular routes chosen for (and within) this particular study.[2]

Schön (1965, cited in Elliott 1990:54) argues that metaphors embody clusters of concepts which are *displaced* from a quite different context of application to a new situation. The relationship of these concepts to the 'instances' they describe is 'symbolic rather than literal' (Elliott 1990:54). He describes the selection of metaphorical concepts as being intuitive and highly subjective and not "... *explicit inferences from evidence*" (*ibid*). In qualitative research

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[2] For another example of the use of metaphor in environmental education research, refer to the dissertation on 'Environmental Education and Research in southern Africa' by Janse van Rensburg (1995).

metaphoric language is often employed by researchers to symbolise things as they appear to and are experienced by the researcher. By employing symbolic descriptions I do not assume that the events or situations described in this research necessarily have public meanings which exist independently of my subjective use of their meaning. For example, using the metaphor of an 'extended journey' for the research project, I refer to *my experience* of the research as an eventful process which occurred over a period of time. The use of symbolic imagery does not only cover the "... relation between concept and situation ...", but covers the "... total relationship between perceiver, concept and situation" (Elliott 1990:55). In so far as symbolic imagery may affect the validity of the research account, Elliott (*ibid*) sees *sincerity, honesty,* and *self-awareness* as necessary conditions of valid symbolic description.

### 1.3.2 A case for alternative discursive practice

Thinking and writing about self[3], our theories, practice and research are not given but are constructed by each of us in community (Diamond 1993:517). Through the creation and interpretation of text and 'going public' with the personal, community[4] is extended. Diamond argues that by "... becoming more present to each other through writing, each voice can redefine, call to, and awaken others to reply". Recent critical reviews of the socially and historically constituted nature of scientist's texts have led to a reflexive[5] interest among researchers in understanding the social and historical roots of their own textual practices (Berkenkotter 1993:294).

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3 Diamond (1993:512) refers to 'self' as a relation and not a thing.

4 Popkewitz (1988:87) gives an insightful description of the notion of community as being "... at once a philosophy about what it means to know, a political vision about the relationship between mind and thought in society, and a structure by which to define relations among people with their world. The notion of community directs attention to the pedagogical issues of interaction among people, the ways in which knowledge develops from discourse, and the norms and values of groups that foster or impede group cohesion".

5 A reflexive action is one which is 'bent back' so that it affects the doer. The medium is turned back upon itself. Reflexivity presupposes a relationship which must be continuous and unending, because it is both irredeemably particularised and endlessly problematic (Winter 1987). O'Donoghue (1993, cited in Janse van Rensburg 1994) refers to reflexivity as "... cultural reconstruction through critical social processes of experiential review" (see 5.3 for an ongoing discussion on reflexivity).

Lincoln (1990) and Popkewitz (1990) argue for a consideration of the intimate connection that exists between researchers' use of rhetorical conventions and their tacit assumptions about the nature of knowledge (Berkenkotter 1993:295). Lincoln (1990:85) argues for alternative discursive practices and textual conventions that are congruent with methodological assumptions, and by implication, epistemology. Many authors who deal with issues of method argue that research reporting strategies of conventional social science research are inappropriate for reporting naturalistic, critical and reflexive research (Janse van Rensburg 1995; Lincoln and Guba 1985; Popkewitz 1990; Sherman 1993; Zeller 1987, cited in Berkenkotter 1993). Atkinson (1991:165) supports these arguments by saying that we may indeed come to the view that the normal canons of written scientific discourse are inappropriate for the representation of complex and multiple realities.

Taking explicit account of the relationship between epistemology (see 3.3.1) and textual conventions in a research project is therefore necessary to avoid incongruencies on a methodological and epistemological level. To enable the discourse and textual conventions of this research project to reflect its socially constructed[6] and partial nature (see Chapter 5), I have chosen to write in more narrative[7] ways, rather than choosing the expository and clinical route and genre of traditional report writing. In a dissertation titled 'A rhetoric for naturalistic inquiry', Zeller (cited in Berkenkotter 1993:295) states that the fictive techniques of new journalism (i.e. narrative and description) that writers use to create authenticity are more congruent with the fundamental assumptions or 'axioms' of naturalistic and reflexive research. By attempting to be self-consciously reflexive[8] in reporting the events of the research process, whilst accepting the

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6 Moving away from traditional inquiry in the human sciences, I regard as fundamental to my inquiry a position which acknowledges (along with Fien 1993a; Huckle 1991, 1995a; Lather 1986b, 1991; Smyth 1986 and others) that knowledge is essentially value based, socially constructed (Berger and Luckman 1966) and historically grounded within specific contexts (Popkewitz 1984, 1988, 1993/4).

7 Using narrative as a textual convention which views knowledge as constructed, dynamic and changing, is viewed as an appropriate form for writing qualitative texts (Atkinson 1991; Berkenkotter 1993; Diamond 1993; Elbaz 1991; Sherman 1993).

8 Lather (1991:29) notes that self-reflexivity provides some experience of both rendering problematic and provisional our most firmly held assumptions and nevertheless acting in the world, taking a stand.

inevitable partiality and constructedness of all writing, I hope to provide a rigorous narrative account which is not "... knitted according to the intentions of others" (Pessoa 1991:7, cited in Diamond 1993:511).

### 1.3.3 Developing a research voice

A significant aspect of this research report will be the development of voice as a central text. Bakhtin (1981:434) describes voice as the "... speaking personality or speaking consciousness". Britzman (1991, cited in Diamond 1993:511) adds that voice suggests relationships. The struggle for voice begins when an attempt is made to communicate meaning to someone else. "Finding the words, speaking for yourself, describing your experience and feeling heard by others are all part of this process" (Diamond 1993:511). The development of a research voice can be traced through the reporting of the experiences of this journey as three or more voices reflecting my experience of the research journey. The 'different' research voices heard are the voice of the inexperienced tourist I was in phase one of this journey, the voice of a more seasoned traveller in phase two and the voice of a guide in phase three, each one adding new dimensions and nuances to the previous research voices.

The development of a research voice through the textual practice described in this chapter will also attempt a "... break from the traditional safety of a third person account and academic conceptualization derived from formal, developmental stage theory" (Diamond 1993:513). Instead, a mind shift from rationalist abstraction to disciplined and rigorous intuition, description and interpretation, that is, from third to first person voice will be reflected. Sherman (1993:236) emphasises the use of the active voice in reporting qualitative research when he states that "... (q)ualitative research writing requires the researcher to take a stand, to be an interpreter, and to be engaged in the action. It requires the active voice".

### 1.3.4 Characterising and reading the text

Atkinson (1991), together with Meloy (1994), warns that we cannot expect a shared understanding of our textual conventions. In addition, Berkenkotter (1993:295) warns that a call

for new rhetorical conventions to match methodological criteria can be an "... oversimplification of a complex process of dialectics, readership and shared understandings of what constitutes credibility in new knowledge claims". Developing a shared understanding of the text requires the reader to travel alongside the researcher on the road to epistemological, methodological and discursive clarity and understanding.

Central to the dialogic nature of text construction and reading should be clarity and a shared understanding of some of the pervasive features of qualitative texts. Atkinson (1991:172) refers to these features as being "... the interweaving of extracts, episodes, and narratives on the one hand; and interpretation, observation, commentary, and generalization on the other".

Lofland's (1974) analysis of qualitative research reporting raises the issue of the importance of the textual arrangement itself. For the reader, form and content are inextricably linked. The reader must be drawn into the frame of the text and come to share the perspectives of the text; it must be found "... plausible and engaging, arresting or novel; it must establish relations of similarity with the social world it reports" (Atkinson 1991:170). The frame of text and the qualitative data should be 'interpenetrated' through minute and continual alteration between data and frame-elements, and in so doing, a text can be constructed in which the whole is more than its parts (Lofland 1974:108-109).

## 1.4 FRAMING THE RESEARCH JOURNEY AND INQUIRY PROCESS

Lofland (1974) suggests that a successful text should weave together the local and the generic and should achieve a satisfactory mixture of data and discussion, example and generalisation. In an attempt to achieve a reflexive text which encompasses the interactions suggested by Lofland, I have chosen to structure this text in a way which is contrary to current convention. A masters thesis in education is conventially expected to be structured according to a sequence which starts with a comprehensive literature review to elaborate the theoretical argument of the thesis, a methodological section which either sets out to prove or disprove an hypotheses or research question, and some chapters which discuss the ensuing results. A concluding chapter



which draws conclusions and makes recommendations often ends the study[9]. This thesis differs from the more conventional models of representing research in that the literature review is visible throughout as research processes and events are reported, and the use of literature is harnessed to highlight, illuminate and develop better understandings of the research process in an ongoing way. In addition, this thesis does not aim to 'conclude' or make recommendations to the reader, but rather aims to open up possibilities for further inquiry *with in* and *beyond* this research report, and offers the reader rather a selection of multiple 'endings' which are tentative indications of ongoing possibilities.

In this thesis I aim to represent research as a *process* which is socially constructed within a particular social and historical context (see Chapters 2 and 5 for insights into the socio-historical location of the research). To make this possible, I unfold the thesis as a series of phases in an extended journey, lasting four years. I use this structure both to track and describe the shifts in the nature of the research process and to track the engagement with socially critical environmental education as an orienting theoretical framework for the research project. Although these phases unfold in broad chronological and temporal order, the boundaries between these phases cannot be clearly demarcated as specific points in time at which one phase ends and another begins[10]. As Chapter 4 and Chapter 5 will illustrate, shifts and changes[11] do not necessarily take place as an evolutionary progression of events that can be 'neatly' described through structuring the text.

Socially critical environmental education (best described by Fien 1993a; Greenall Gough and Robottom 1993; Huckle 1991, 1995a; Robottom and Hart 1993a) is used as an orienting

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9 See Van Rensburg (1995:14) for a supporting account of an alternative structure for thesis presentation in environmental education research.

10 Gough and Kesson (1992:1) deconstruct common western assumptions concerning the material reality of time, by saying that time as a "... linear and material construction ..." is only one among many constructions of reality and is a conceptual system which is being increasingly challenged. In this thesis I use the work of T.S. Eliot to present an alternative framing of time, linearity and evolutionary order in research.

11 Change is not in the evolutionary progression of events or in the conscious efforts of people to change those events. Change is in the manner in which, and the conditions in which concepts change (Popkewitz 1993/4:22).

framework for this study and presents a possible way of responding to the emergence and deepening of the environmental crisis (see 2.2.2) and the emergence of growing support for democratisation of education (see 2.4.2) in South Africa. Key elements of this theoretical stance which were to inform the nature and direction of the research process are highlighted in Chapter 2. The journey metaphor is employed to describe different forms of engagement *towards*, *with in* and *beyond* socially critical environmental education. This thesis represents an exploration of the praxis (Grundy 1987:104-5, see 3.3.2) of socially critical environmental education in a participatory materials development project (the We Care Primary project). *It represents an attempt to clarify socially critical environmental education as a possible 'tangible alternative' to modernist*[12] *models of environmental education and change in a South African context*. Figure 1.1 illustrates the structure and location of the thesis, indicates the overlapping boundaries between the phases, and illustrates the theoretical orientation of the research project.

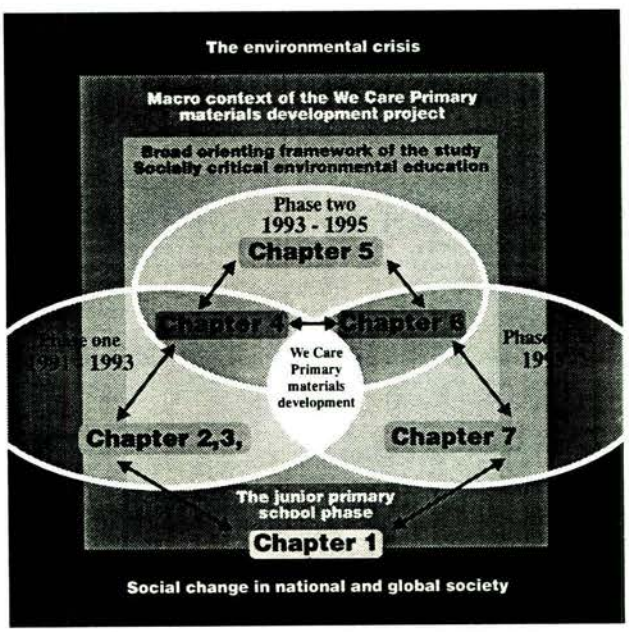


*Figure 1.1* *The structure, orienting framework and contextual location of the research report*

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12 See Chapter 2 and Chapter 5 for an ongoing dicussion on modernism and modernist models of education and change in environmental education (see also Janse van Rensburg 1995).

The phase descriptions unfold as a sequence of chapters which represent destinations along the journey. Each destination (chapter) has its own combination of itinerary (structure), map (interpretation and direction), travellers (encounters) and tourist attractions (features) to visit. The itinerary and tour plans for each of these chapters differ in nature - some are a conceptual exposition or theoretical justification (see Chapters 2, 5 and 6), interwoven with practical and contextual elements of the case record[13]. Other chapters document descriptions of the action research process and an analysis and interpretation of the research events (see Chapters 3, 4 and 5) whilst some chapters map reflexive and critical perspectives on the research activities and conceptual positions (see Chapters 4 and 6).

### 1.4.1 Phase one: A journey *towards* socially critical environmental education

*Phase one* of the journey documents the development, trialing, testing and redevelopment of the We Care Primary pilot materials from 1991-1992/3. The descriptions indicate the development of a participatory orientation to materials development within the We Care Primary project, and indicate a journey *towards* socially critical environmental education. This phase describes my growing theoretical competence and knowledge of the theoretical position and assumptions of socially critical environmental education, and the implications which these have for the choice of research design and methodology and for participatory materials development. It also documents the praxis of the research process, and highlights key themes emerging from the data. My growing competence, confidence, insecurities and uncertainties in 'doing' emancipatory action research are revealed through 'thick descriptions' (Elliot 1991a) of the research process. The relation between the theoretical concepts and assumptions embedded in socially critical environmental education and the practical task of 'doing' the research are critically reviewed with a view to informing the further development of the project. Phase one of this research journey is described in detail in this research report, with a view to providing grounding and a frame of reference for the descriptions in phase two (which represent an overview of the

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[13] The case record mentioned here refers to the diverse sources of data collected for this study (see Appendix 1 for an inventory of the data files). For the purposes of this report, a selection of this data (coded DF) and the data analysis (coded AM) has been made to extend the text, and to provide samples of evidence to support claims, descriptions and statements. References to data selected for the case record (which comprises volume 2 of this thesis) are coded CR in the text (see Appendix 2 for a content list of the case record).

research process from 1993-1995), and for the reflections and reflexive descriptions in phase three.

*Chapter 2* provides an insight into my travelling plans and destination brochures which set the direction for the first phase of the journey. This is presented as a conceptual framework and details the interrelated theoretical, contextual, social and historical aspects which contributed to the framing of the research question, and which informed the choice of research orientation and methodology for this study.

*Chapter 3* provides a grounded justification and description of the choices which I made for a critical orientation to research, and the choice of emancipatory action research as methodology for the study. There is a short description of the diverse data collection techniques, and a brief discussion of related research issues such as data analysis, ethics, validity and the role of the researcher to provide a guiding framework for the research activities. This chapter describes the planning and action phases of the first cycle of inquiry in this project. It describes the development of a participatory orientation to the trialing and testing of the We Care Primary pilot materials, and describes my first encounters with a wide range of teachers. The use of workshops as a research strategy for participatory materials development is described and critically reviewed in this chapter, as are some of the data collection techniques. As central thesis of this research, the concept of participation is critically scrutinised in the light of the democratic and emancipatory ideals of the critical orientation chosen to guide this study. A description of significant personal interactions and the ongoing engagement with issues of doing research are provided to highlight the impact which these encounters had on the analysis and reflections on the first inquiry cycle of the project.

*Chapter 4* highlights the role of teachers as participants in the change and transformation process. This chapter represents the culmination of the first phase of the journey, and maps the reflective phase of the first cycle of inquiry. Key themes emerging from the data are described as possible 'sites of change' for ongoing inquiry, and as such the culmination of phase one of the journey does not signify an 'arrival' at a destination point in the research. It rather indicates a 'stopping off point' where I was able to assemble and critically review old and new travel

information, to reflect on phase one of the journey and re-route the journey for phase two. In the same manner, the journey undertaken in phase one *towards* socially critical environmental education does not signify competence with the assumptions of this orienting framework. Paradoxically, the 'arrival' merely signals a new 'beginning' and further engagement *with in* the research process and orienting framework of the study.

### 1.4.2 Phase two: A journey *with/in* socially critical environmental education

*Phase two* of the research journey represents an extended journey *with in*[14] socially critical environmental education. *Chapter 5* highlights the ongoing research response to the themes, issues and 'weaknesses' which emerged from phase one of the research project. This chapter presents a change in orientation to materials development in the We Care Primary project, and describes shifts in orientation to the research process and a shift in perspective on the role of materials and materials development in educational change and transformation. These changes in orientation signal an emerging and changing conceptual framework, an engagement *with in* the assumptions of socially critical environmental education, and an exploration of new 'areas' of research in the We Care Primary project. As this chapter merely represents an overview of the phase two research activities, three central themes (emerging from phase one) are described in detail. These are: the establishment of conditions for authentic participation in materials development initiatives; ongoing materials development with teachers; and the relationship between curriculum development, materials development and in service teacher education (INSET). In addition, the potential role of participatory materials development projects in school based change processes are critically reviewed in this chapter. This chapter represents a reflexive 'extension' of Chapter 3 and represents windows of insight into the second cycle of inquiry in this project. It reveals action research as a complex, multi-layered research process with multiple cycles of inquiry occurring simultaneously.

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[14] The use of *with in* in this thesis denotes the complexities of engaging *with* the theoretical assumptions of socially critical environmental education (an 'outsider' role), whilst grappling as full participant *in* the research process (an 'insider' role) with the practical realities of 'doing' socially critical environmental education. The use of *with in* challenges the dualism which separates theory and practice in research (Janse van Rensburg 1995), and portrays my involvement in a process of praxis *with in* the research enterprise.

### 1.4.3 Phase three: A journey *beyond* socially critical environmental education

In *phase three* I reflect on the journey so far, and critically review the itineraries, travel maps, encounters and destinations of the research journey with a view to highlighting shifts in orientation towards research, and the way in which alternative theoretical perspectives may influence and enhance our practice. This phase presents new directions and possible alternative routes to extend this journey and provide perspectives which reach beyond those of socially critical environmental education, which I, as traveller, could have taken. In *Chapter 6* I offer a tentative critique of the preceding pages in the research report. In this I attempt to move research and pedagogy beyond the contemporary horizons of existing critical traditions and argue for a multiplicity of perspectives to provide vantage points through which a 'new' critical theory may be developed to highlight the complexity of the research enterprise, and not reify or repress aspects of our practice. I, through presentation of multiple 'endings', introduce a range of emerging and ongoing possibilities for further inquiry *with in* and *beyond* the We Care Primary project through which ongoing clarity and new perspectives on participatory materials development in environmental education can be sought. The purpose of this phase is not to direct others in their research journeys, but to contribute to catalogues or research brochures and provide a range of options and possibilities that others can consider when planning their own research journeys.

## 1.5 A BRIEF MAPPING OF THE RESEARCH SETTING

The greater part of the research activities took place in the Cape Town metropolitan area in the Western Cape (now the Western Cape Province). As a result of the project developments in 1992, the We Care Primary project became 'institutionalised' as an ongoing environmental education research initiative through the establishment of the Environmental Education Programme at Stellenbosch University (EEPUS) in 1993. This research project became one of two major research projects which were housed, co-ordinated and developed through EEPUS. The location of the research project as a university-based initiative substantially influenced the status, possibilities and direction of the research.

Any journey is influenced (and often determined by) material, social and historical factors. In a similar manner this research project has been influenced significantly by material conditions such as funding and project partnerships, and the availability of transportation. Other contextual, social and historical factors such as the current educational, socio-political and socio-ecological conditions in South Africa, the historic elections in our country in 1994, the merging of education departments and the 'opening up' and democratisation of our society had a profound effect on the possibilities and constraints within this research project. Meetings with travellers along the way in different places and times, interaction with fellow travellers, and the opportunity to work alongside them, also influenced the direction and nature of this research journey. Although much of this research was 'set' in the Western Cape area, many other meetings, social encounters and research activities took place outside the geographical boundaries of the Western Cape, and are reported as part of the research process.

## 1.6 SETTING THE DIRECTION FOR THE RESEARCH JOURNEY: DESCRIBING THE RESEARCH FOCUS AND AIMS

To set the pace, direction and itinerary for any journey, the traveller needs to have some form of destination in mind. Likewise, a research project cannot be conceptualised without a focus or research question. The question or focus for this research was set as a result of a number of influencing contextual and pragmatic factors. These factors support the arguments for choosing to focus the research on materials development in junior primary environmental education *with in* a socially critical environmental education orientation, and are presented in Chapter 2. Setting the focus (question) and direction (design) for this research project emerged as two separate aspects of doing research. The research question has remained broadly the same as was initially pre-determined (CR1.1) when the research proposal was submitted in November 1991. The research design, however, was emergent (see 3.2, 5.3 and 6.3) and changed over time [15]. This reflects the process of clarifying theoretical orientations to research and changing perspectives on the use and implementation of research methodologies. Changing sites of inquiry, action and

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[15] To note the emerging and substantially changed research design of this thesis see the initial research proposal submitted to the higher degrees committee in 1991 (CR1.1) and chapters 3.2, 5.3, and 6.3. A comparison of the initial research design with this thesis, shows the many shifts and changes that have taken place through the duration of the study.

critical reflection within a context of shifting orientations to environmental education and educational change, influenced by the larger socio-political changes in the region, are reflected by the changing and emergent research design within the We Care Primary project. These shifts and changes are clearly indicated by the changing orientations to research in phases one, two and three described in this report.

At the start of this research, I set out to investigate the development of environmental education resource materials for junior primary classrooms through teacher participation. As capital for this inquiry process, I had a pilot package of materials (the We Care Primary pilot materials) which I was to trail and test with teachers, with a view to redevelopment and wider distribution. The focus of the research implied working with teachers to further develop the materials. The initial aims of the research project (indicated in my original research proposal) were to:

- Address a perceived lack of, and need for, environmental education resource materials for the junior primary school phase through the development and provision of appropriate materials through teacher participation in the trialing, testing and redevelopment of the We Care Primary pilot materials;

- Make use of an action research orientation to guide a process of participant-centred materials development which would challenge the assumptions of the traditional RDDA (research, develop, disseminate, adopt) model of materials development (see 2.3.2).

Reviewed retrospectively, these aims appear to be limited in nature, and show little insight into the complexities of questions such as: What constitutes 'appropriate' materials, how does one define a 'perceived need' for materials, how authentic is the participation in materials development done through a trialing and testing process, what should the nature, format, style and methodological orientation of the materials be, and how are these aspects determined? Further questions relating to the above aims constitute a questioning of the assumptions of the RDDA model for materials development, and what the implications of challenging such a model might be. These, and other questions were to emerge throughout this research report, and made visible the simplicity of my assumptions at the outset of this research journey.

## 1.7 CONCLUDING COMMENT

> *As I write, I face the inescapability of reductionism. Language is delimitation, a strategic limitation of possible meanings. It frames; it brings into focus by that which goes unremarked. While the silences of my own writing are subject to some comment in the text which follows, I am keenly aware that I write in a time when the formerly unsaid unheard are becoming increasingly visible and audible* (Lather 1991:xix).

By way of introduction to the forthcoming pages, you, the reader, are introduced to the many strands which I have woven across the pages of this thesis. One is the story of my research into the process of developing materials with teachers where the concept of participation in educational transformation is explored in some detail. I develop tentative views on alternative pedagogies, relevant curricula and allude to concepts of quality in junior primary education.

Another strand which weaves through this thesis, is my exploration of what it means to do research in post apartheid South Africa and I explore the promise of reflective practice, and the possibilities of doing emancipatory action research with teachers. Also apparent, through these pages, is my attempt to write my way to a better understanding of the deeply embedded social and cultural roots of modernity in a global environment which is increasingly threatened by degradation and the risks associated with wealth production and increasing poverty (Beck 1992). In so-doing, I hope to gain clarity on ways in which environmental education may be best able to respond to these emerging risks which are steadily leading to environmental disaster.

Presenting a further dimension of this study, I attempt to weave together a text which is neither temporal nor evolutionary, that doesn't totalise, that doesn't present theoretical orientations as fixed and monolithic, and which presents a conceptualisation of knowledge as "... constructed, contested, incessantly perspectival and polyphonic ..." (Lather 1991:xx), reflecting the larger cultural shifts of a post-industrial, post-colonial era which is becoming increasingly post-modern (see Chapter 6). My hope is to create a text which is open enough to work in ways which I cannot anticipate, and which can offer multiple perspectives to different readers who wish to participate with me in an ongoing search for clarity in environmental education.

# PHASE ONE

## A JOURNEY *TOWARDS* SOCIALLY CRITICAL ENVIRONMENTAL EDUCATION

*To arrive where you are, to get from where you are not*
*You must go by a way wherein there is no ecstasy.*
*In order to arrive at what you do not know*
*You must go by a way which is the way of ignorance.*
*In order to possess what you do not possess*
*You must go by the way of dispossession.*
*In order to arrive at what you are not*
*You must go through the way in which you are not.*
*And what you do not know is the only thing you know*
*And what you own is what you do not own*
*And where you are is where you are not.*

(from East Coker by T.S. Eliot)

# CHAPTER 2

# SETTING THE DIRECTION: A SOCIO-HISTORICAL LOCATION OF THE RESEARCH QUESTION

***the journey***

*where are you going I asked*
*to places I have never been*
*was the answer*
*what do you plan to do I asked*
*my purpose will be evident at journey's end*
*who has planned your itinerary I asked*
*its plan will be revealed at times most unlikely*
*why would you consent to such a vague plan I said*
*I accepted the challenge*
*when I accepted life was the answer*

(from Images of Women in Transition by Mary Eleanor Rice)

## 2.1 INTRODUCTION

The first leg of this research journey took place between 1991 and 1993. At the time I was still an inexperienced[1] traveller with a vague and confusing itinerary. Broad (and unclear) concepts and images listed on my itinerary were limited to ideas of action research, socially critical environmental education, materials development, participation and educational change. The story told in phase one is that of a journey *towards* socially critical environmental education. It describes my first encounters with environmental education and my emerging understanding of the current environmental and educational crises. A parallel journey into the process of doing

[1] A four session module on environmental education in 1991 was my first (and only) encounter with this study area prior to this research project. Likewise, I had no knowledge of non-positivist or qualitative research at the start of this project. Positivist, empirical analytical research was the only research orientation and methodology which had been presented as part of undergraduate and post graduate studies which I had previously followed at two South African universities.

action research, through which I was developing experience in the use of research methods is described as an emerging item, added to the journey's itinerary. In this chapter, I recount some items on the itinerary in a way which will probe for conceptual clarity, contextualise and locate the research question, provide pathways for phase one, and set the direction for the second phase of the research journey. Through this I hope to provide rigour to the research account which will be derived from an

> ... articulation and reasoned justification of [my] educational intentions, ... intended to reveal the reasons for [my] professional actions and to enable those reasons to be subject to critical scrutiny (by [myself and] others) ... (Stevenson 1995:200).

To provide this rigour, perspectives on the emergence of environmental education and the historical development of the We Care Primary project in the context of transformation in junior primary education will be mapped in some detail. These perspectives will be mapped to show their relation to setting the direction for the We Care Primary project and the phase one research activities (reported in Chapters 3 and 4).

## 2.2 THE EMERGENCE OF ENVIRONMENTAL EDUCATION

### 2.2.1 Introduction: clarifying perspectives

The journey of inquiry reported here, which I shared as part of the product of my study, began many years before I actually engaged in the formal research process. The need for change in national and global society was all about me as I embarked on my own research journey: political, educational, ecological, socio-economic and personal crises abounded. The path which I was to follow (see Chapter 3 and Chapter 5) had already been prepared in many ways by others who, like me, were concerned about the impending environmental and political disasters facing South African society and the global community. By the time I started the research in 1992 a history of emerging change was significantly visible within South African society, largely influenced by socio-political factors which led to the first democratic election to be held in the history of South Africa in 1994.

A historical overview of the emergence of environmental education in the context of an education system at risk or in crisis[2] (see 2.4.1) and increasing socio-ecological problems and environmental risks (see 2.2.2) provided many beacons which were to influence the direction and nature of the research journey. In 2.2.2 and 2.2.3 some clarifying perspectives are developed on the emergence of environmental education as a response to the global environmental crisis[3], and point towards the implications which the international and national shifts and clarifying perspectives in environmental education had (and still have) for the We Care Primary Project. O'Donoghue (1993b:11) realises the importance of clarifying trends and perspectives in environmental education if "... we are to construct policy and curriculum [and materials development] reform processes that are relevant in southern Africa".

### 2.2.2 The environmental crisis: how should educators respond?

Warnings of the magnitude and all pervasive nature of the environmental crisis and the related threat to life on earth are reaching us from all spheres and disciplines of our social and physical existence. The warnings come not only from scientists, economists, historians and futurologists, but from statesmen, philosophers and religious leaders, authors, poets, modern media sources and others. The impending environmental crisis is seen by many as one of the most serious and universal challenges to face humanity (Beck 1992; Capra 1983; Marshall 1992; Merchant 1983; Orr 1992; Rivers 1988; Zohar and Marshall 1994). These authors trace the roots of the current global environmental crisis to the cultural productions of the features and processes of techno-scientific progress and change which followed the age of Enlightenment, the age which we have

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2 Over the past few years the word 'education' has come often to appear in tandem with the word 'crisis'. Maseko (1994:12) notes that the use of the word 'crisis' captures the fact that education in general and African education in particular is near collapse. This crisis has been 'long in the making' and reflects dramatic decline in quality to unprecedented levels, due to shortages of qualified teachers, shortages of essential facilities and the pervasiveness of authoritarianism, irrelevant curricula and high levels of demoralisation.

3 Like the word 'education', the word 'environment' has come to appear in tandem with the word 'crisis'. Global warnings of increasing environmental problems - greater global pollution, ozone depletion, rampant rainforest losses and worsening human poverty - are some of the global issues which are associated with increasing environmental destruction. These problems are described by many authors and organisations (Capra 1983; Orr 1992; Rivers 1988; IUCN/ UNEP/ WWF 1992) as reaching crisis proportions and are becoming a threat to humanity. The term is used in this study to reflect the serious nature of environmental destruction and risk.

come to know as Modernity[4]. Mortari (1994:96), drawing on the work of Arendt (1987), however, challenges the assumption that the roots of the environmental crisis lie only in the modern era and traces the cultural roots of the environmental crisis to the earlier Greek philosophical tradition which, through the construction of dualisms[5], developed the "... tensions towards separation, which are the archetype of western thought".

Zohar and Marshall (1994:3) relate the causes of the current social crises to mechanistic perceptions of social and political reality[6] and clarify this further by stating that "... our whole perception of 'modernity', is a mechanistic perception". It was formed in direct response to the philosophical and scientific revolution (Beck 1992; Marshall 1992; Orr 1992; Zohar and Marshall 1994) of the seventeenth century that gave birth to modern science. Other cultural productions of the modernisation process in industrial society into the first half of the twentieth century are: an obsession with progress[7]; technicism[8] and technical control; structural

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4 In Beck's *Risk Society - Towards a New Modernity* he refers to a three stage periodization of social change. He distinguishes between pre-modernity, simple modernity, and reflexive modernity. This view holds that modernity is co-extensive with industrial society and the new reflexive modernity with the risk society. Industrial society and risk society are for Beck distinct social formations. The risk society is, however, still an industrial society, because it is mainly industry (in conjunction with science) that is involved in the creation of the risks of the risk society (Lash & Wynne: Introduction to Beck 1992).

5 Mortari (1994:96) cites Arendt (1987:103-106) in arguing that the categorical imperative of modern western thought is founded on separation and manifest in the dualisms upon which the west has constructed its thought: spirit/matter, mind/nature, rationality/affectivity, logic/intuition.

6 Zohar and Marshall (1994:3) refer to the compelling nature of mechanistic thought by noting that "... (t)he sheer power and simplicity of Newton's three mechanical laws of motion, and the apparent force of the new empirical method, drew nearly every influential social, political and economic thinker of the seventeenth, eighteenth and nineteenth centuries to use them as a model".

7 Beck (1992:200) defines progress as being "... much more than an ideology, it is a 'normal' institutionalised *extra-parliamentary structure of action for the permanent changing of a society*" (original emphasis).

8 Technicism implies an unquestioning belief in the value of technique and technology (Capra 1983; Janse van Rensburg 1995:152).

functionalism [9]; individualism[10]; scientism[11]; and the modernisation processes of wealth and risk production[12].

Beck (1992) sees the consequences of scientific and industrial development as a set of risks and hazards which are revealed as irreversible threats to life. These risks can no longer be limited in time or space, but rather they cross national boundaries and affect not only one institution, unit or nation. Douglas and Wildavsky (1983) describe the environmental crisis as a series of risks and decompose this impending catastrophe into three essential elements: dangers that are involuntary (we would not be willing to accept them), irreversible (there is no turning back), and hidden (we shall not know we are encountering them). They see the perception of risk as a social process and argue that it is necessary to consider the social aspects of addressing (and determining) questions of 'acceptable risk'[13]. A consideration of the implications of risk perception is significant for educational processes if we are to respond to the environmental crisis. We may need to refocus our thinking on education[14] (see 2.2.4 and 2.4.1) and may need to find ways of educating which will develop a citizenry of critical thinkers who are able to interpret and demystify science, recognise risks, consider risks critically and respond reflexively to these risks within diverse social contexts and processes.

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9 Structural functionalism implies a preoccupation with the structure of phenomenon, as determinant of their function (O'Donoghue 1993, described in Janse van Rensburg 1994).

10 Individualism suggests that self interest is the essential principle upon which society should be based. Individuals are seen as existing prior to and separate from social arrangements, and are thus seen as more important than societal associations ( Beck 1992; Goodman 1995; Robottom 1991; Tesh 1988).

11 Scientism refers to the "... constellation of an unbroken faith in science and progress" (Beck 1992:156).

12 Wealth production and the distribution of risk refers to the increasing quantities, qualities and extent of risks being produced by automation and new technologies (Beck 1992:153).

13 The notion of 'acceptable risk' could be linked to the concept of sustainable living. Like the 'determination' of sustainable living patterns, acceptable risk is a social construct to be determined through social processes of informed negotiation within local contexts.

14 Huckle (1988:62) argues that school curricula are based on unquestioning views of social change and economic force. Such teaching "... renders pupils impotent as agents of social and environmental change".

Janse van Rensburg (1994:1) emphasises the complexity, interrelatedness and interacting dimensions of environmental issues[15] and states that "... their origins have been traced to deep seated values, social systems and practices". It is becoming increasingly apparent that the current environmental problems which contribute collectively to the environmental crisis, are not problems of our surroundings. In their origins and through their consequences they are thoroughly *social problems*, problems of people, their history, their relation to the world and reality, their social, cultural and political situations (Beck 1992; Janse van Rensburg 1994, 1995; O'Donoghue 1993; Zohar and Marshall 1994).

An increased understanding of the complexity of the environmental crisis and its social nature has led many authors to argue for *social change*, and that real *social transformation* (Beck 1992; Capra 1983; Janse van Rensburg 1995) or even a *social revolution* (Birch 1990, cited in Greenall Gough 1993a:42; Docherty 1993; Zohar and Marshall 1994) is required if we are to challenge and expose the cultural-political hegemony of scientism, mechanistic modernity and the production of risks. This appears to be no simple task if one accepts the following description by Zohar and Marshall (1994:16) of the nature of social transformation:

> Real social transformation requires that we change our basic *categories* of thought, that we alter the whole intellectual framework within which we couch our experience and our perceptions. We must, in effect, change our whole mind set, learn a whole new language.

Beck (1992:121) recognises the complexity of social transformation by stating that "... (m)odernisation, however ... is not a carriage one can step out of at the next corner, if one does not like it".

Plant (1995:11) sees environmental education as a response to the environmental crisis and emphasises the need for environmental educators to continue with an "... on-going search for ways of responding to the environmental crisis". He extends this argument and suggests a way in which environmental education as a social movement (Janse van Rensburg 1995) can respond to the environmental crisis by noting that "... new social movements are becoming increasingly

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[15] For an insightful discussion on the complex dimensions of the global environmental crisis see Janse van Rensburg's (1995:20-23) analysis and diagram.

reflexive in questioning the risks arising from technology, political power and expert systems" (*ibid*). Taylor (1995:1) too realises the importance of linking environmental issues with educational processes and argues that environmental education has the potential to "... enhance our understanding of environmental problems and refocus our thinking on education". Beck's (1992) concept of 'reflexive modernity' challenges us to reflect critically on modernity, its ideals and *the ways in which we attempt to realise them*. Perhaps the challenge to environmental educators is then to release themselves from the structural constraints of modernisms'[16] grand narratives[17], and actively to begin shaping the modernisation process through "... reflexive and critical processes of experiential review" (O'Donoghue 1993a:37). Fien (1993a, together with Greenall 1987; Huckle 1988, 1991; Spork 1992) recognises the need to link environmental education to the social and political nature of environmental issues and social transformation (see 2.2.4). He sees environmental education as a social agency through which the "... transformation to an ecologically sustainable society is to be achieved ..." (Fien 1993a:vi) and argues for environmental education as

> ... a counter hegemonic process: [which] is a challenge to the way that uncritical educational practices accept and reproduce the Dominant Social Paradigm as a taken for granted and 'natural' way of interpreting people-environment relationships (Fien 1993a:16).

The positions of Taylor (1995), O'Donoghue (1993a), Fien (1993a) and Huckle (1991) highlight the need for environmental educators to respond to the environmental crisis in ways which

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[16] Arnowitz and Giroux (1991:7) describe modernism as being "... synonymous with the continual progress of the sciences and of techniques, the rational division of industrial work [and the] intensification of human labour and of human domination over nature. A faith in rationality, science and technology buttresses the modernist belief in permanent change, and in the continual and progressive unfolding of history". Greenall Gough (1993a:41) sees modernism within the history of science as "... having its roots in the period of the Enlightenment in the sixteenth and seventeenth centuries. It has acted as the dominant model of the universe, or dominant world view, since its inception and offers a particularly mechanistic interpretation of nature's use and value".

[17] 'Grand narrative' refers to single, universal explanations, theories and strategies, for example the totalising theories of Marxism, Hegelianism, Apartheid and any other philosophy of history based on notions of causality, and all-encompassing global resolutions regarding human destiny (Arnowitz and Giroux 1991:68). Lyotard (1984:xxii) refers to the dialectics of the Spirit, the hermeneutics of meaning, the emancipation of the rational or working subject, or the creation of wealth as examples of grand narratives.

actively challenge the assumptions, practices and cultural productions of modernity. Janse van Rensburg (1994; 1995) recognises the need to *interpret environmental education and research in the context of social change*, and regards *environmental education as having a key role to play in social transformation.*

### 2.2.3 The emergence of environmental education as a response to the global environmental crisis

A global response to the environmental crisis has defined and shaped environmental education through a series of landmark events and publications in recent decades[18]. The first significant global environmental conference was held in Stockholm in 1972, and since then a number of notable conferences have been held with accompanying documentation which produced guiding principles, policies and action frameworks for environmental education. Among those that are better known are the Tbilisi Declaration (UNESCO-UNEP 1978), the World Conservation Strategy (IUCN 1980) and more recently Agenda 21 (1992). The significance of environmental education as an internationally recognised social movement "... assumes this importance through its potential to involve people at local, national and global levels in socially active, problem solving, critical and participatory processes ..." (Spork 1992:145). Environmental education is then much more than knowledge transmission and awareness raising about environmental problems: it is described by many environmental educators as a process that challenges the power relations predominant in society (Fien 1993; Greenall Gough 1993a; Huckle 1991; Robottom 1987a; Spork 1992). Environmental education also questions the relationships between people as well as between people and their environment (Wals 1993), and dominant behaviour patterns of individuals and entire societies, to bring about social transformation and the development of a new environmental ethic. Through this process, the values and skills for social participation which support environmental problem solving, improvement and protection

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[18] See O'Donoghue (1993b:12,13) for an overview of some landmark international events which have been held to address environment, development and environmental education issues. Fensham (1978) describes the evolution of environmental education from "Stockholm to Tiblisi", which led to the Tiblisi Declaration in 1977 (see CR2.1 for a copy of the Tiblisi Principles for environmental education) and later to the Bruntland Report in 1987. More recently, Agenda 21 was produced from the 1992 Rio Earth Summit (see CR2.2 for the Treaty on Environmental Education for Sustainable Societies and Global Responsibility).

(Fien 1993a; Robottom 1987a, 1992; Spork 1992; Wals 1993) may be developed.

Fien (1993a:50-55) traces the origins of socially critical education *for* the environment (see 2.2.4) to the three International Environmental Education Programme conferences held in Belgrade, Tbilisi and Moscow (UNESCO 1975, 1980; UNESCO-UNEP 1976, 1978, 1998 in Fien 1993a). He interprets the works of critical writers in environmental education (Huckle 1986, 1988, 1991; Pepper 1987; Thomas 1987; Wals 1990) and highlights a high degree of accord between their views and the principles of the Tbilisi declaration (see CR2.1).

The perspectives and interpretations of these landmark events have been varied and have led to the emergence of different approaches to environmental education over time which has given rise to dispute and contestation on approaches to environmental education (Greenall Gough 1993b; Lucas 1979; O'Donoghue 1993a; Robottom 1987a). Robottom (1987b) argues that the goals, objectives and principles of environmental education may be interpreted in a number of ways, depending on the ideological viewpoint of the reader or environmental educator using them. He also sees the general form of organisation ultimately recommended at Tbilisi as being managerial hierarchial in character (Robottom 1987a:91). O'Donoghue (1993a) criticises these earlier attempts at defining environmental education for being linked to perceptions which view the environmental crisis as resource destruction, pollution and conservation issues, to the exclusion of *social, political* and *economic* concerns. He sees this interpretation of events being linked to the emergence of dominant approaches to environmental education which are aimed at "... communication of information to create public awareness and nature study fieldwork experiences to change values and attitudes ..." (O'Donoghue 1993b:10), perspectives which he criticises heavily as "... monstrous myths shaped on narrow ideals which have emerged as grand theories of environmental education to engineer behaviour and awaken earth love" (*ibid*).

Robottom (1987a) argues that a number of key influences shaping the development of environmental education have their origins in institutional education. Stevenson (1987:73) and Robottom (1987a:91), in reviewing the development of environmental education, highlight the tensions and contradictions apparent in institutionalised environmental education (see Chapters 4 and 6). Stevenson (1987:69) sees the problem solving, critical thinking, decision making,

quality of life issues and active involvement prescriptions of the Tbilisi principles and the socially critical and political action goals of environmental education as contradictory to the traditional social reproduction purposes and practice of schooling, and describes the inherent tensions as a rhetoric-reality gap.

The development and interpretation of these landmark events have been criticised by many environmental education authors for their assumptions of rationalistic, objectives-based views of change (Greenall Gough 1993a; Huckle 1995b; Janse van Rensburg 1995; O'Donoghue 1993a, 1993b; Robottom 1987a). Greenall Gough (1993b) sees the place of science in environmental education, competing views of education[19], environmental philosophy (environmentalism[20]); green politics and feminist perspectives[21] as being significant 'shaping imperatives' on environmental education. Although it is recognised that the shaping of environmental education cannot simplistically be ascribed to any one particular event, interpretation or position, she sees the instrumentalist roots of environmental education inextricably entwined with "... an environmentalism of the rational scientific variety ..." (Greenall Gough 1993b:38) and writes "... it is within this instrumental culture that the environmental education culture arose"(*ibid*:41).

Robottom (1987a:91, 92) cites UNESCO (1977) as an example of the rational scientific nature of earlier approaches to environmental education and their instrumentalist, technicist and deterministic perspectives of social change. He refers specifically to the recommendations regarding the development of teaching materials in the 1977 UNESCO document to extend his argument:

> ... a particular effort will have to be made to prepare appropriate *teaching materials* to *train and retrain educators* and enable them to introduce environmental education into

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19 See Kemmis, Cole and Suggett (1983:20-21, CR2.15) for a table showing three competing views of education (vocational/neo-classical, liberal/progressive, socially critical).

20 For a discussion on the changing meaning of environmentalism, see O'Riordan (1989).

21 Di Chiro (1987:43) offers a feminist perspective of environmental education and outlines how the practice of environmental education could benefit from feminist processes, for example "... by recognising the importance of personal, subjective experience in understanding social reality".

> their teaching ... (I)t ... seems particularly urgent for teachers to receive not only general teacher training but also training in the devising of simple methods and instruments of research and evaluation enabling them to test, in the light of the objectives pursued, the effectiveness of the various components of the educational process (curricula, teaching materials, methods, etc) (original emphasis).

Robottom (1987a:91-93) further criticises the UNESCO document for placing emphasis on educational objectives, an instrumental view of developing teaching materials, and the instrumental role of research. While recommending that practitioners become involved in research, teachers are portrayed as *technicians* carrying out instrumental type research to test the effectiveness of activities and material which can then be applied to 'persuade' or 'encourage' other learners at other sites. This view of change retains the characteristics of a rationalist RDDA model (see 2.2.2) of social change. The implied managerial-hierarchial approach to change becomes "... an impediment to the educational reform necessitated by interdisciplinary, inquiry-based, socially critical environmental education" (Robottom 1987a:93).

Recently, the Rio Earth Summit (United Nations Conference on Environment and Development 1992), again placed the environmental crisis at the centre of global concern for policy development and action. The largest ever gathering of world leaders endorsed *Agenda 21*, a comprehensive blueprint for global actions needed to affect the transition to sustainable development. Running alongside the official conference was a global forum of the world's environmental non-governmental organisations (NGO's), community groups and indigenous peoples (Huckle 1995a:5). The Treaty on Environmental Education for Sustainable Societies and Global Responsibility (see CR2.2) provides an alternative view of change in environmental education and states:

> We consider that environmental education for equitable sustainability is a continuous learning process based on respect for life. Such education affirms values and actions which contribute to human and social transformation and ecological preservation. It fosters ecologically sound and equitable societies that live together in interdependence and diversity. This requires individual and collective responsibility at local, national and planetary levels (Alternative Treaties from the International NGO Forum, Rio de Janeiro, 1992: EJNF Newsletter no. 2, Winter 1994).

Huckle recognises a positive outcome of the 1992 Earth Summit as *Agenda 21's* endorsement of education for sustainability and its focus on *participation* and *empowerment*. It recognises the

socially critical nature of *education for sustainability* (Fien 1993b; Fien and Trainer 1993; Huckle 1991, 1995a)[22]. This implies:

> ... a shared process of reflection and action on those forms of social organisation and culture which will best allow us to live in harmony with one another and with the natural world. It considers a range of social alternatives, develops people's abilities as decision makers, and requires the democratisation of both education and society so that they can realise their common interest in sustainable futures (Huckle 1995a:9).

Fien and Trainer (1993:13-17) note that environmental educators in a number of countries are accepting the challenge of education for sustainability. They caution, however, that education for sustainability is not a simplistic notion to be adopted blindly, and, through an overview of current debates surrounding sustainability and sustainable development, note that much of the current writing and debates are based on:

- Unproblematic assumptions about education and social change (see 5.7);
- Unproblematic views of sustainable development[23];
- The failure to provide moral or political direction for pathways to sustainability;
- The simplistic assumption that environmental education about global environmental problems and strategies for sustainable development will change global development;
- Unrealistic expectations of schools and teachers (see 5.7 and 6.3); and
- The emergence of approaches to environmentalism that emphasise the personal transformation of individuals (individualism).

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22 Fien (1993b), Fien and Trainer (1993) and Huckle (1991, 1995a) explain the concept of sustainability and the need for a socially critical orientation to education for sustainability. Fien (1993b) cites the Second World Conservation Strategy, published under the title *Caring for the Earth* by WWF (1992), as trying to avoid the debate over sustainable development and states that the use of the term 'sustainable living' was coined instead. This proposes that "... governments, industry and families need to live by a new world ethic of sustainability" (Fien 1993b:10).

23 Bak (1995) notes that when decisions about sustainable development are made, the knowledge and participation of local communities is essential. She problematises the concept of what constitutes a local community in South Africa, and notes that the particular political history of South Africa has created a sense of community which is "... largely fragmented, divided and in flux" (*ibid*:8). This weakens the premise of *the* common good, and in the light of this argument, holds that we first need to address the problems found in a South African context, before we can focus on the question of whether sustainable development *can* be pursued. She develops the argument further by casting doubt on the chances of success of an environmental policy based on sustainable development.

In attempting to address the global environmental crises, environmental educators around the globe have been involved in a process of defining, clarifying, interpreting, reflecting on and absorbing new challenges and perspectives which the role of education and the vision[24] of a better, more just and ecologically sustainable world holds for humanity. Within these shifting orientations and perspectives on the nature and role of environmental education as a response to the global environmental crisis, *the motivation to achieve social change and social transformation seems a central factor* (De Lange *et al* 1995; Fien 1993a, 1993b; Fien and Trainer 1993; Firth 1995; Huckle 1991, 1995a, 1995b; Janse van Rensburg 1995; O'Donoghue 1990; O'Donoghue *et al.* 1994; Schreuder 1994; Robottom 1987a, 1992, 1993a; Taylor 1995; Wals 1993). The emergence of different orientations to environmental education made visible through literature, teaching materials, and examples of practice, show different perceptions and orientations to social change[25]. Janse van Rensburg (1994:8-12, 1995) identifies and explores some of the more apparent views of what change in environmental education entails:

- Change as restoring order (centre to periphery or managerial orientations to change);
- Change as the resolution of practical problems (community problem solving orientations to change which are underpinned by liberalist ideologies); and
- Change as reconstruction (a critical orientation to change).

Many of these perspectives on change "... seem to involve particular *models* of how the advocated change [is] to be brought about" (Janse van Rensburg 1995:151). She critically reviews these perspectives on change and notes their concern with an incremental, evolutionary process of rationally reasoned progress (*ibid*:166). Through reflection on orientations to change, Janse van Rensburg reveals a 'reflexive perspective' or orientation to change, which emphasises

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[24] Ponder and Holmes (1992:407) see 'vision' as a "... mental image of the possible, a view of a realistic, attractive future ... a vision is a target that beckons and compels others to act, *it demands change*" (my emphasis).

[25] For a detailed explanation of different models or perspectives of change, change as a modernist phenomenon and how orientations to change emerge from with/in environmental education practice, see Janse van Rensburg (1995:141-166).

process rather than product, which is not concerned with the direction of the change[26] and which does not rely on the formal research enterprise as a tool to bring about change. She sees environmental education as a "... responsive process of change ..." and sees reflexivity in environmental education as a tentative engagement with change through "... collaboratively developing capabilities (tools, resources, action competencies) to deal with and encourage change, in local contexts" (*ibid*:168).

The agenda for social change and social transformation has been prominent within the development of environmental education in South African over the past twenty years. Ramphele (1991:1) describes the focus on change in the country as '... a narrow focus on political change as the prime concern during the transitional phase". In South Africa, environmental education emerged as a response to unique and complex socio-ecological, socio-economic and socio-political environmental issues (Ramphele 1991) caused by both Modernism and "... its delinquent cousin Apartheid ..." (O'Donoghue 1993a:29). Social engineering, dispossession, anti-urbanisation and forced removal policies (Ramphele 1991) together with social, economic, and educational marginalisation of the majority of the country's people and the concomitant struggle for social justice, equality and a non-racial, democratic future characterised the context in which the shifts in environmental education have taken place. This, together with conservation policies and 'conservation education' which were insensitive to the survival needs of disadvantaged communities, the limited environments of townships or rural areas which offer little exposure to wider concerns, the effects of Bantu Education (see 2.4.1), and other anti-development programmes have all worked against the involvement of the majority of South Africa's people in environmental issues and environmental education (Ramphele 1991:7).

Ramphele (1991:7) recognises the recent development of a more people centred, participatory approach to ecological concerns and notes that 'green politics' is slowly making its way into the central political arena. The letter (and by implication support) from President Nelson Mandela

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[26] Popkewitz (1984, cited in Janse van Rensburg 1995:161) questions the idea that change can be brought about by applying a model. In his view change can only be described as discontinuities, disruptions or breaks in practice and discourse and can only be described after the event. Janse van Rensburg (*ibid*) sees this view of change to be congruent with that of a reflexive perspective of change.

to the EEASA'95[27] conference (EEASA conference proceedings, July 1995); together with the incorporation of environmental (and environmental education) concerns in the Government of National Unity's policy of reconstruction and development (RDP 1994:38-41) supports this position. The need to "... empower communities to act on environmental issues ..." (RDP 1994:40) bears witness to the fact that environmental and development concerns are becoming central issues on the political agenda of South Africa. In addition, the RDP (1994:4-6) clearly states that democratisation is absolutely integral to the whole RDP, and that fundamental changes are required in the way that policies are made, and programmes are developed and implemented:

> Above all, the people affected must participate in decision making ... (d)emocracy is not confined to periodic elections. It is rather, an active process of enabling everyone to contribute to reconstruction and development (RDP 1994:7).

Environmental education in South Africa has developed over time within the context of international shifts and trends in environmental education, the shifting context of significant socio-political change and the move towards democratisation of South African society. A comprehensive description and critique of the historical enactment of environmental education in southern Africa is given by O'Donoghue (1990, 1993a, 1993b) and Janse van Rensburg (1994, 1995). Some of the more prominent trends visible (as described by O'Donoghue 1993a, 1994a, 1994b) in environmental education are:

- Communication approaches which are aimed at 'targeting messages' at 'target groups';
- Nature experience and values education approaches which provide experiential learning approaches *in* the environment; and
- Socially critical and democratic approaches to environmental education which provide opportunities for critical reflection, participation, lobbying, experiential review, networking and reconstructive environmental action.

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[27] EEASA is the Environmental Education Association of southern Africa. It was established in 1982 at the first South African International Environmental Education Conference held at Treverton College. EEASA, through its membership has made a significant contribution to the development of environmental education in southern Africa over the past decade.

O'Donoghue (1993a:32), in reflecting on these orientations to environmental education realises that these shifts and changes have not been temporal, chronological, evolutionary or linear, and states:

> Modernist/apartheid notions of experiential intervention and targeted messages are alive and well with prevailing political economies still supporting information communication and nature centres to cause awareness and change. Unfortunately, potentially more tenable alternatives often appear confused or complex. Clarifying these issues and seeking practical alternatives is thus an arduous and challenging process fraught with competing positions, vested interests, egos and complex language.

These 'conventional' approaches to environmental education are being questioned by various authors (Fien 1993; Huckle 1991; Janse van Rensburg 1994, 1995; O'Donoghue 1990, 1993b; Robottom 1987a, 1991; Schreuder 1995). Janse van Rensburg (1994,1995), O'Donoghue (1993b, 1994a, 1994b), Huckle (1995a) and Schreuder (1995) argue that many of the conventional approaches to environmental education are based on modernist assumptions which contribute to environmental degradation, the educational crisis[28] (Schreuder 1995; Bowers 1984) and the 'risks of wealth production' (Beck 1992). O'Donoghue (1994b) sees the central flaws in traditional forms of environmental education interventions as "... having an untenable social engineering ideology and simplistic notions of teaching and learning ... [which] ... cannot accommodate the reality of how people come to socially construct and change the way they see the world". He draws our attention to the challenge facing environmental educationists nationally and globally by stating:

> ... we urgently need tangible alternatives to the modernist models of environmental management and education that have proliferated ... over the last decade and which have been enacted within the prevailing orientations of modernism which have driven progress to a point of environmental catastrophe (O'Donoghue 1993a:29,36).

The educational aspects and ideological discourses and contestation over the meaning and interpretation of environmental education can be traced through the literature which helped to

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[28] Modernist assumptions in environmental education reflect the cultural productions of the modernisation process in industrial society (see 2.2.2). Examples of modernist assumptions in education include positivist research and management styles; scientism, instrumentalism and anthropocentrism in educational philosophy; structural functionalism, instrumentalism and reductionism in curriculum theory and behaviourism in educational theories (Schreuder 1995:4).

stimulate the emergence of the environmental education movement. Fien (1993a:14) sees the influence of ideology[29] as central to any study of the underlying values and social impacts of environmental education and through his development of a critical curriculum theory for environmental education (1993a), acknowledges "... multiple discourses and contestation over the nature and meaning of environmental education activities" (*ibid*:15). Three relatively discrete forms of environmental education based on differing ideological perspectives are identified, described and critiqued in diverse ways by many environmental educators (Fien 1993a, 1993b; Huckle 1991; Lucas 1979; Robottom 1987b; Robottom and Hart 1993; Schreuder 1995; Spork 1992 and others). These discrete forms of environmental education include:

- Education *about* the environment which emphasises knowledge about the natural systems and processes and the ecological, economic and political impact of human decision making on the use of the environment;
- Education *through* the environment which emphasises students' experience in the environment as a means of developing learner competencies and values clarification capacities; and
- Education *for* the environment which has an overt socially critical agenda of values education, social change and transformation through action based exploration and involvement in the resolution of environmental problems (Fien 1993a:15-16).

The educational orientation for this thesis is located within the theoretical assumptions and ideological position of education *for* the environment as described by Fien (1993a, 1993b), Huckle (1991, 1995a) and Robottom and Hart (1993).

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[29] Ideology is "... a value or belief system that is accepted as fact or truth by some group. It is composed of sets of attitudes towards various institutions and processes of society. It provides the believer with a picture of the world both as it is and as it should be, and, in so doing, it organises the tremendous complexities of the world into something fairly simple and understandable" (Sargeant 1972:1-2, cited in Fien 1993a:16). Fien (*ibid*:17) sees an educational ideology as providing a "... philosophical framework or orientation which may be used to guide educational decisions and explain their consequences".

### 2.2.4 Socially critical environmental education as guiding orientation for this study

Given the socio-political shifts towards democracy and social change in South Africa (see 2.4.2), and the development of participatory, people-centred approaches to environmental education in the region (Ramphele 1991), this thesis represents an exploration of the praxis of socially critical environmental education (education *for* the environment) in a participatory materials development project (the We Care Primary project). *It represents an attempt to clarify socially critical environmental education as a possible 'tangible alternative' to modernist models of environmental education and educational change in a South African context.* The assumptions and theoretical perspectives of socially critical environmental education (Fien 1993a) are used as an orienting theoretical framework for the thesis, and will form the 'axis' for reflection and ongoing review throughout the thesis (see 4.5.1, 4.5.7 and Chapter 6).

Fien (1993a:43) describes education *for* the environment as follows:

> Education *for* the environment represents an integration of a socially critical orientation in education and ecosocialist environmental ideology. The objectives of critical education *for* the environment include the development of moral and political awareness as well as the knowledge, commitment and skills to analyse issues and participate in an informed and democratic way in environmental decision making and problem solving.

Adopting a critical approach or 'a critical environmental consciousness' can, according to Fien (1993a:60) and Huckle (1991), be developed through an understanding of the central beliefs of ecosocialist environmentalism[30]. They argue that these central beliefs should form the heart of any environmental education programme and that gaining insights into these perspectives can empower students (and teachers) to "... engage in new kinds of questioning and problem posing

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30 Fien (1993a:60) summarises the central beliefs of ecosocialist environmentalism as four key ideas or generalisations: (1) the environment is a social construction. It is the pattern of interdependent natural and social systems which results from the social use of nature to satisfy human needs and wants in societies based upon different political economies; (2) the root causes of environmental problems are found in the processes and institutions of dominant economic systems and in the ideologies and hegemonic processes in the superstructure that are used to maintain them; (3) the solution to environmental problems lies in contemporary changes in both the economic base and the ideological and institutional superstructure of society and (4) environmental politics involve contestation over access to resources and the uses to which they will be put. This is a process in which all citizens in a democracy have a right and a responsibility to participate.

appropriate to an overtly dominated human world" (Green 1978, cited in Fien 1993a:60).

Fien (1993a) sees socially critical education *for* the environment as being located within the socially critical traditions of education because of its concern for social criticism and reconstruction. Fien and Trainer (1993:6-7) see the roots of a socially critical orientation to education as being based on the view of education as a *critical social science* (Fay 1987) which supports a critical education theory for environmental education in that it is *scientific* (in its assessment and explanation of the environmental crisis), *critical* (it offers a consistent ideological analysis) and *practical* (it provides a conceptual framework and pedagogical principles for curriculum and materials development[31]). Fien (1993a:22) sees socially critical education as being

> ... founded upon a belief in the need for education to play a role, along with other social institutions and agencies, in creating just and democratic societies ... [It recognises] ... that education can never be ideologically neutral ... [and is] ... committed to active pedagogical initiatives aimed at promoting social justice, equality and democracy through the 'thoughtful, ethically based, responsible and critical examination of social problems and active participation in developing a continually improving society' (Stanley and Nelson 1986:529, cited in Fien 1993a:22).

The socially critical orientation in education sees teachers, schools and students as active members of society who may, through ongoing critical reflection and action, and participation and ongoing interaction with the hegemonic influences in their world, help create a more socially just and ecologically sustainable world. A reciprocal relationship between teachers, schools and society is recognised in which "... formal education is both shaped by, and responsive to the needs of society and, in turn, helps to shape the society of which schools are part" (Fien 1993a:23). Kemmis *et al.* (1983:9, cited in Fien 1993a:22) emphasise this role for schools by stating that

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[31] Fien (1993a:59-75) defines five characteristics of critical education *for* the environment as: (1) the development of a critical consciousness, based on the beliefs of ecosocialist environmentalism, (2) the development of critical thinking and problem-solving skills which includes skills for inquiry and ideology critique, (3) the development of an environmental ethic based on the core democratic values of ecological sustainability and social justice, (4) the development of the understandings, skills and values of political literacy, and (5) critical praxis, which is an approach to pedagogy which integrates reflection and action.

> ... education must engage society and social structures immediately, not merely prepare students for later participation. It must engage social [and environmental] issues and give students [and teachers] experience in working on them - experience in critical reflection, social negotiation and the organisation of action. Education must develop the power of constructive critical thinking, not just in individuals but also in group processes. The substance of education ... must emphasise social and critically-reflective processes, not only what history has thrown up as worth knowing.

A socially critical orientation thus has implications for the styles of teaching and learning adopted and for the nature and content of the curriculum[32] (Greenall Gough and Robottom 1993). Environmental education seen from this perspective becomes a responsive process of addressing environmental issues and problems from within the school environment, made possible through active participation and ongoing critical reflection-in-action by teachers and students. Schreuder (1995:5) argues in support of socially critical education *for* the environment as a *counter-hegemonic* process which can provide a way of "... affecting the required social transformation". He sees socially critical education *for* the environment as a way of achieving social transformation and educational reconstruction, both items on the itinerary of this research journey.

However, the 'implementation' of socially critical environmental education in the formal school context appears to have 'failed' due to 'gaps' between the goals and advocated processes of socially critical environmental education and those of schooling (Hart 1993:117,118; Spork 1992). Stevenson (1987:76) gives two explanations for the contradictions between socially critical environmental education and the goals and pedagogical functions of schooling:

- The social and cultural purpose of schooling is primarily concerned with the fostering and perpetuating of social stability and cultural and economic reproduction of the beliefs and values of the Dominant Social Paradigm;

- Teachers' curriculum and pedagogical ideologies reflect a conception of knowledge as

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[32] Kemmis, Cole and Suggett (1983) see socially critical education as having characteristic views of knowledge, roles of teachers and learners, broad curriculum organisation, school-community liaison and the role of consultants. For a full description of these see CR2.15 or Greenall Gough and Robottom (1993:305, 306).

being authoritative, objective, discipline-centred and technical. This, in turn, supports a concern for maintaining classroom order and the use of highly structured texts and transmission methods of teaching.

Hart (1993:118) notes that these contradictions manifest as fundamental pedagogical contradictions between environmental education and schooling and argues for teacher participation in the improvement of environmental education in schools (see 4.2). Schreuder (1995:1) recognises the complexity of addressing the contradictions between schooling and environmental education as a daunting challenge[33]. He notes that South Africa has an unique opportunity to respond to the many crises in both education and the environment. He also cautions that the selection of options that will contribute towards real transformation and social change may be problematic. One aspect which he predicts as being problematic in practice, is the realisation of teacher and community participation, given the current lack of financial resources to support these processes, as well as pressure for educational provision in historically disadvantaged schools, making the provision of 'curriculum as prescription' (Goodson 1990) an easier and less demanding option (*ibid*:10).

Throughout this study and its ongoing engagement with the challenges provided by a socially critical orientation to environmental education in the formal education context (Hart 1993:118), insights were gained from the works of critical writers in environmental education such as Fien (1993a, 1993b), Greenall Gough (1993a, 1993b), Robottom (1987a, 1987b, 1993a), Robottom and Hart (1993a, 1993b), Huckle (1991, 1993, 1995a) and other critical writers in education (Apple 1982, 1985, 1986; Arnowitz and Giroux 1985, 1991; Goodman 1992, 1994, 1995; Grundy 1982, 1987; Fullan 1991, 1993; Kemmis *et al.* 1983; Lather 1986a, 1986b, 1991). These works helped me clarify the reasons for the choice of working *with in* the orientations of socially critical education *for* the environment and provided broad guidelines for the materials

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[33] Schreuder (1995) outlines some of the major challenges which are facing the Environmental Education Policy (EEPI) research process. He sees some of the challenges being located in the choice of research orientation, curriculum development approaches, philosophies and processes as well as materials development processes. A further challenge is located in the new education department's ability to provide and develop appropriate teacher INSET programmes to redress some of the inequalities in teacher education in the past (see Chapter 3,4, 5 and 6 for an exploration of some of these challenges in practice).

development process (see 2.4.3), curriculum development (see 5.6) and pedagogical action (see Chapters 3 and 5) within the research project.

Huckle (1993) notes that the application of critical theory to education has rejuvenated radical left discourse in such fields as curriculum theory (Grundy 1987), educational research (Carr and Kemmis 1986), teacher education (Giroux 1988) and materials development (Apple 1985). In environmental education, this discourse has come to illuminate curriculum theorising and pedagogy (Fien 1993a; Greenall Gough and Robottom 1993; Pillay and Naidoo 1994; Schreuder 1994); professional development (Huckle 1995a; Lotz 1995a; Robottom 1987a, 1987c) and research (Hart 1993; Janse van Rensburg 1995; Robottom 1993; Robottom and Hart 1993a, 1993b; Wals 1993). Robottom and Hart (1993a) argue that a socially critical form of environmental education encourages participants at all levels to adopt a research stance towards their own environmental education activities. This orientation to environmental education gains its authority from the "... strongly educative processes of collaborative, critical self-reflection within particular practical situations" (Robottom and Hart 1993a:24). O'Donoghue (1990:14) sees environmental education as a "... stimulus to foster collaborative social processes of research, reflection and change". These views are based on a positive view of the role of teachers in critical learning and social transformation contexts (Fien 1993a:84; Arnowitz and Giroux 1985), an aspect which supports teacher participation (see 4.2) in a materials development process as the central focus for this study, and is described in 2.4.3 as 'pathways towards transformation' for this study.

This view of teachers replaces earlier pessimistic languages of critique and reproduction[34] with a language of possibility which views teachers as able "... to understand both the limits and the enabling possibilities that characterise schools" (Giroux 1988:2, cited in Fien 1993a:84). Fien (1993a:85) notes that critical education *for* the environment is based on such a language of possibility which acknowledges that teachers have their own theories of teaching which are subject to change, whilst providing

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[34] The language of critique and reproduction mentioned here refers to a view of education which is described by Giroux (1981:98) as "... a monolithic view of domination and ... [an] ... unduly passive view of human beings". This language alienates teachers from the tasks of counter hegemony and social reform that socially critical education can serve (Fien 1993a:83).

> ... the foundation for a view of teachers as capable of taking active responsibility for curriculum planning, the development of teaching materials, and the classroom implementation of their intentions ... [which highlights] ... a view of teachers as intellectuals ...

Socially critical education *for* the environment contributes to three forms of empowerment which Giroux (1989:1, cited in Fien 1993a:55) outlines as the goals of critical pedagogy: empowerment through personal autonomy; the empowerment of reason; and the empowerment to create possibilities for transforming wider social and political structures. These goals and features of critical environmental education are reflected in the socially critical and transformative objectives and identified pathways towards transformation in the We Care Primary project (see 2.4.3).

Support for my intention to engage in a participatory process of developing environmental education materials with teachers (see 2.4) is provided by Robottom and Hart (1993a:24). They argue for the contextualisation of research, and support a perspective in which "... agents ... develop and improve their own professional practices through processes of participant research". O'Donoghue and Mc Naught (1991:4) see scientific inquiry as "... sustained inter-subjective social processes by which communities come both to solve problems and to reconstruct the way they see the world". The choice to work within a participatory orientation to research (see 3.3) was grounded in the shifts towards participatory materials development processes in South Africa, described through a historical overview of the We Care Primary project.

## 2.3 A HISTORICAL OVERVIEW OF THE WE CARE PROJECT: 1987-1991

### 2.3.1 Providing direction for the We Care Primary materials development project

These clarifying perspectives on environmental education and their implications for setting the direction and providing an orienting framework for the We Care Primary project gain further significance when viewed in the context of emerging patterns and trends in environmental education materials development (see 2.3.2). The particular history of the We Care project (2.3.3), as a case history telling the story of how the initial 1987 We Care materials (DF1) were developed and how this process gave rise to the We Care Primary materials, illuminates the

pragmatic and socio-historical influences at work at the time when the We Care Primary materials were being conceptualised and developed in draft form. This story clearly demonstrates how these influences were instrumental in setting the direction of this research project, and influenced the choice of research design, research orientation and research activities (reported in Chapters 3, 4 and 5).

### 2.3.2 Mapping a South African response to RDDA approaches to materials development in environmental education

Early responses to the environmental crises assumed that environmental issues would be solved through the development of experiential activities *in* the environment, and the provision of information *about* the environment. Many resource materials were developed (and still are being developed) to facilitate the processes of awareness raising and experience through 'targeted messages'. The development of these materials was grounded in what has come to be known as a top-down and centre-out strategy of materials development, or the RDDA model (Kirk 1990; O'Donoghue 1990; Pillay and Naidoo 1994; Popkewitz 1984). This involves research (R) by experts who then develop the materials (D), disseminate them to schools (D) for adoption (A), with some adaptation by teachers (see figure 2.1). This deterministic model creates a situation where research teams or 'experts' are the creators of materials and teachers are viewed as technicians who implement the materials in schools. This model has formed the framework for traditional materials development processes followed by educational publishing, the textbook industry and other curriculum materials development initiatives. The deterministic and technicist nature of this model has been compounded in South African education by political issues of control and management to ensure 'order' and 'structure' to the divided[35] education departments of the apartheid regime.

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[35] During the apartheid era, South Africa had 19 education departments. 'White' education had four independent provincial departments, while so called 'coloured', 'indian' and 'black' education had separate education departments under national control. The other education departments were those of the so called 'Bantu homelands'.

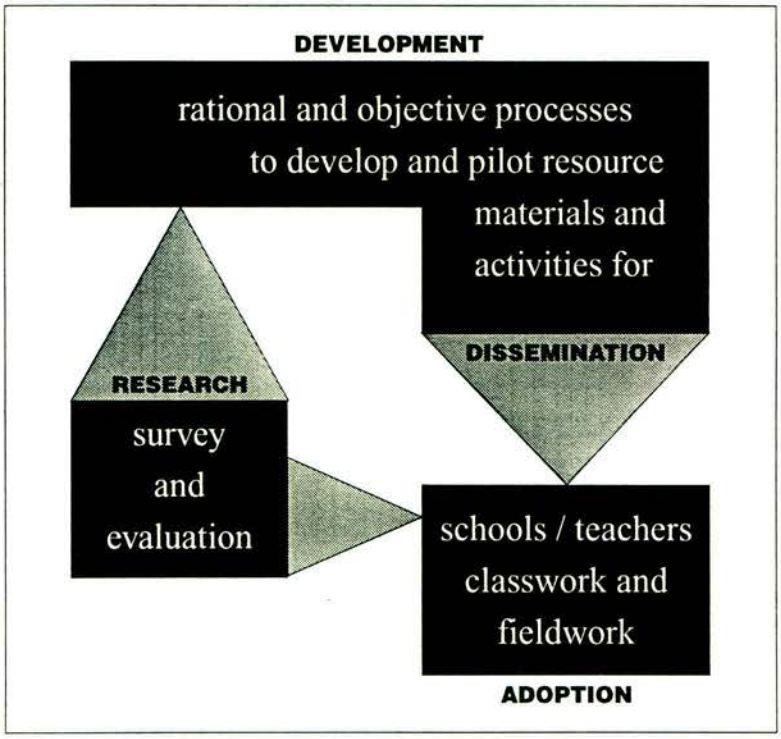


*Figure 2.1 The RDDA model of curriculum change and materials development (O'Donoghue and Mc Naught 1991:395)*

Masokoane (1993:64) cites examples of how educational materials have often been used in South Africa as a "... tool to transfer and entrench apartheid". The influence of the divided education departments led to separate educational materials being developed for the different education departments, secrecy and corruption within the system of book provision and ensuing effects on quality, variety and choice in most South African schools (Proctor and Monteith 1993:31).

Pre-determined and pre-packaged texts or curriculum materials have been identified as being both "... symbolically and functionally related to the growing technicisation of everyday life" (Kirk 1990:409). Apple (1982) and Robottom (1987a) extend the argument by identifying pre-determined materials as representative of ideological control through schooling due to the standardisation, specificity and prescription of these materials. These perspectives emphasise the way in which modernist thinking, epitomised by the managerial-hierarchial nature of the RDDA model, has pervaded education, and more specifically materials development and materials provision in education. In the worst scenario, materials developed within the

ideological foundations of the RDDA model, could lead to attempts to develop teacher-proof materials which are designed to prevent teachers from distorting the changes which the materials are planned to create. Kirk (1990:411), however, points to the lack of success of trends to teacher-proof materials and notes that much work is currently taking place within the development tradition to redress social engineering and technicist approaches to materials development.

In South Africa, and elsewhere, RDDA strategies of materials development have been repeatedly challenged (Ashwell 1992; Gobrechts 1994; Kromberg (ed.) 1993; Lotz 1995b; O'Donoghue 1990; O'Donoghue and Taylor 1988; Pillay and Naidoo 1994; Robottom 1987) and have been criticised for the following reasons:

- The inherent social engineering assumptions and the view of social change through rational management and innovation diffusion (Kirk 1990; Janse van Rensburg 1995; O'Donoghue 1990; O'Donoghue and Taylor 1988);
- The managerial-hierarchial outlook (top-down and centre-out approach) (Kirk 1990: 411);
- The reductionist and rationalist assumptions of the centre to periphery concept of change (Popkewitz 1984:24,131);
- The lack of participation by the end users of the materials (O'Donoghue and Taylor 1988) and the view of teachers as technicians (Robottom 1987a) ;
- A disregard for the contextual variation of users (teachers) (O'Donoghue and Taylor 1988; Papagiannis *et al.* 1982);
- The tendency to obscure the actual conduct of the situations in which the changes (materials) are being applied (Popkewitz 1984:138);
- The symbolic and functional relation to the technicisation of everyday life (Kirk 1990).

Pillay and Naidoo (1994); O'Donoghue (1990) and Kirk (1990) all point out that the RDDA strategy has failed to implement innovations effectively. Pillay and Naidoo (1994:2) partly lay the blame for a "... culture of non-participation of teachers in the curriculum [and materials] development ..." and the lack of skills in this field at the door of RDDA strategies of curriculum

and materials development. Samuel (1993:9) criticises the role that educational publishing (and by implication, the RDDA strategy of materials development) has played in enabling apartheid (and the environmental crisis) to take root in South African society stating that:

> Together with the South African Broadcasting Corporation (SABC), publishers gave form to Christian National Education, contributed to stultifying critical and creative thought throughout the country, ghettoised African languages and, on the whole, provided poor quality materials to black schools.

Samuel (1993), Kromberg (1993), Proctor and Monteith (1993), Masokoane (1993) argue for the need to transform educational publishing (and by implication materials development processes), given the attempts by broader society to create a new, equitable education system. Pillay and Naidoo (1994:1) extend the argument further with their position that since South Africa is currently undergoing a phase of socio-political transition from a modernist apartheid ideology to a democracy, the RDDA model is no longer relevant.

A movement towards participatory orientations to materials development has therefore been influenced considerably by the development of, and preparation for, political changes and repeated calls for democracy in all spheres of life, and the democratization of education in particular. In addition, education policy documents[36] which were developed as South Africa moved towards a new democracy all emphasise the importance of teacher participation in curriculum development and educational decision making. Participation in environmental education (ongoing academic debate, and development of curriculum, resource materials and grounded activities) has proved valuable in the ongoing process of shaping, reshaping and expanding clarity in environmental education and has had a marked influence on the way in which materials have come to be developed (O'Donoghue 1990; O'Donoghue *et al.* 1994; Taylor 1995). O'Donoghue and Mc Naught (1991:396) support the move towards participatory problem

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[36] The period 1990 - 1994 saw the emergence of a number of key educational policy documents, some of the more significant being the Educational Renewal Strategy of the apartheid government's education department in 1991; the NEPI documents which emerged as a counter-hegemonic policy initiative driven and developed by civil society (Carrim and Sayed 1992/93; NEPI 1992/93) and the ANC's Policy Framework for Education and Training (1994). A new White Paper for Education and Training has recently been tabled (1995) which also supports the principles of transparency, participation and democracy in educational decision making and curriculum development.

solving orientations to curriculum reconstruction and develop an alternative model of curriculum change for environmental education through adaptive redevelopment of materials to local needs by teachers.

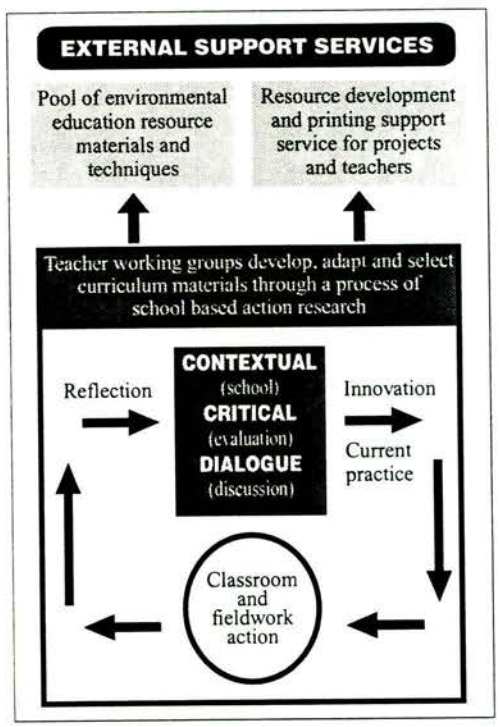


*Figure 2.2* *A participatory model for curriculum reconstruction and materials development through school-based action research (O'Donoghue and Mc Naught 1991:396)*

International support for participatory materials development can be found in the work of Apple (1985), Kirk (1990), Mc Fadden (1992) and Robottom (1987a). Some materials which reflect elements of participatory orientations to the development process, are the Reaching Out materials (Champaign, pers. comm. 15-09-1992; DF33), materials being developed by the Scottish Development Education Centre (pers. comm. 20-10-1992; DF35); OECD/ENSI project materials (Mc Andrew, pers. comm. 24-10-1992; DF34); and some materials developed for the Learning for Landscapes Trust (Day, pers. comm. 25-10-1992; DF33).

Some local examples of materials which have been (or are being) developed through participatory processes in South Africa are the Share-Net materials (O'Donoghue *et al.* 1994);

Schools Water Project materials (De Lange *et al;* Schreuder 1994); Project Water, Grahamstown (Ashwell 1992); Water Poster and teacher materials (Primary Science Programme 1994); Recycling Posters (Gobrechts 1994), the Enviro-Picture Building games (O'Donoghue *et al.* 1994) and the Storyteller comics (Share-Net 1992). All these materials have, to a greater or lesser degree, been influenced by the particular socio-political history of South Africa and the emerging trends in environmental education and environmental education materials development.

### 2.3.3 A story illustrating the shifts towards participatory orientations in materials development: a brief history of the We Care Project (1987-1991)

Documenting the history of the We Care Primary project provides a mini-case study or window of insight into some of the interacting social and historical dynamics which were at play in South African environmental education in the late 1980s and early 1990s. The dynamics and debates surrounding the development, publication, dissemination and use of the 1987 We Care materials (DF1) which were developed, published and disseminated by the SANF (Southern African Nature Foundation, now known as WWF(SA)), proved to be a significant shaping imperative of a participatory orientation to the development of the We Care Primary materials (see figure 2.3 on page 49 for a diagram showing the development of the different We Care materials).

Reviewing this history would be akin to listening to fellow travellers who have passed by the way which you intend to travel, and to note their experiences as a source of interest, information and guidance for the route you wish to follow. As in the case of two travellers arriving at the same destination at different times, some instances of their experience may be shared, but the likelihood of the experience of the two travellers being identical or replicable are slight, if not impossible. In describing the history of the initial 1987 We Care materials, I aim not to produce a recipe which would be replicated in the We Care Primary project or to give a step by step account of the materials development process, but rather to highlight those contextual influences which were significant in determining the research design, methodology and orientation of the We Care Primary project.

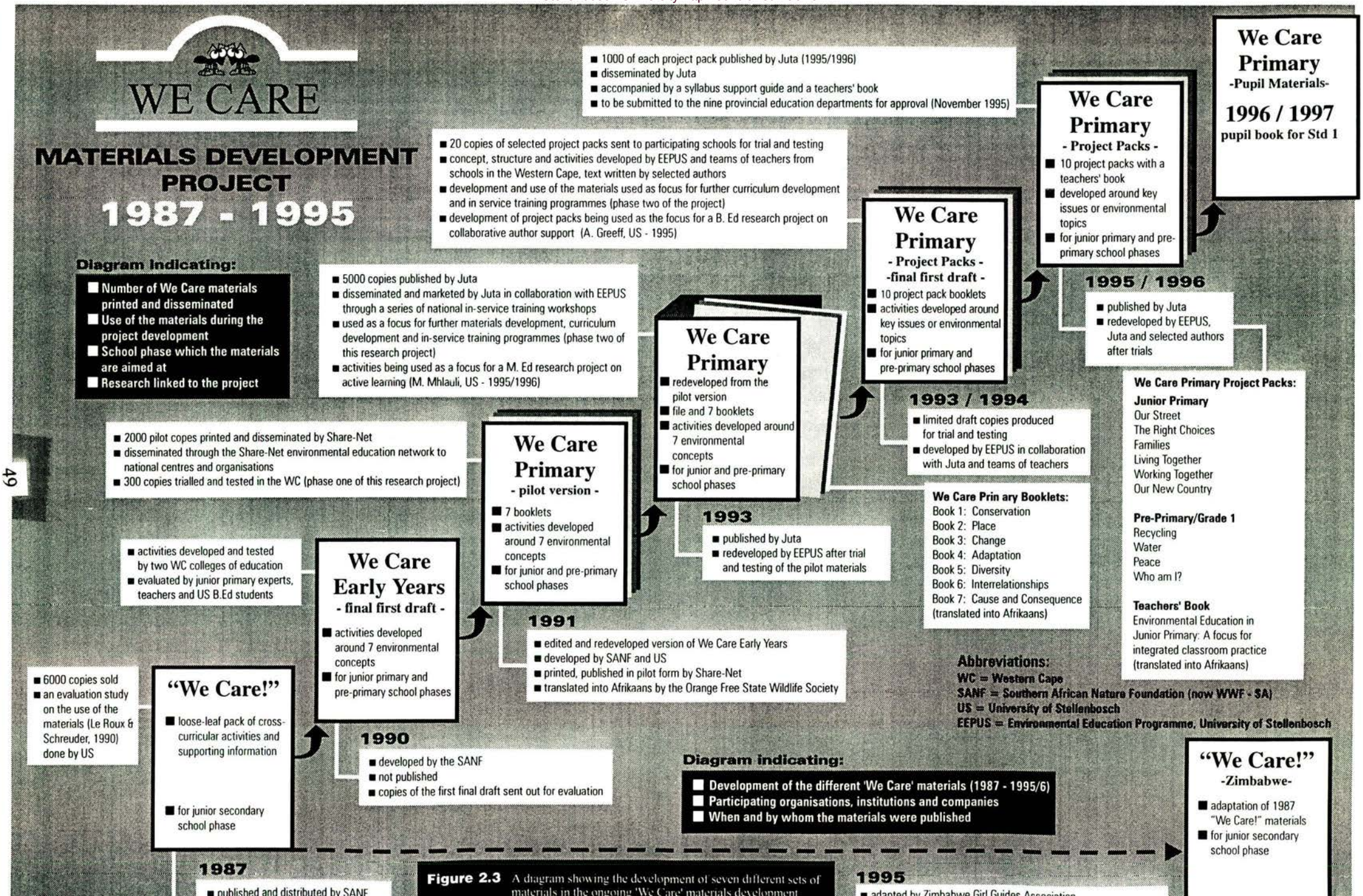


**Figure 2.3** A diagram showing the development of seven different sets of materials in the ongoing 'We Care' materials development

The initiative to develop a series of materials which were more people centred and cross curricular resulted from

> ... a SANF frustration with existing environmental education resource development in South Africa which was heavily orientated towards the natural sciences and specifically the ecology component of the biology syllabus with an emphasis on species and systems. This was the case despite internationally accepted principles that environmental education should be cross-curricular and not restricted to a single subject, and that environmental education should address the relationship of people and nature (Soutter, ZA235 memo 21-08-1991; CR2.3).

Funding for this project was procured from TOTAL (SA). The development of the 1987 We Care materials were co-ordinated by Rob Soutter, education officer at SANF at the time. These materials, developed by a small team of writers representative of the South African community, were an initial attempt at developing participation in the writing of the We Care materials. In retrospect Schreuder (pers. comm. 15-08-1995) notes that although the idea of participation was incorporated into the planning of the project, it was not practicable at the time. The objective was to develop local (not adapted) materials which would not be 'owned' by any 'expert'. The pack developed from this initiative is cross curricular, discovery-oriented and sensitive to the role of people in the environment. Many examples of successfully tried and tested activities were included. The 1987 We Care materials for junior secondary schools, the first of what was to become an ongoing process of materials development (see figure 2.3), were therefore developed by a small team of authors around a more people-centred rationale for environmental education (O'Donoghue and Taylor 1988:5).

In a critique of a small selection of materials developed for environmental education, O'Donoghue and Taylor (1988:5) criticise the 1987 We Care materials for exhibiting a "... blanket-marketing and packaged ..." outlook and describe the development and dissemination of these materials as having a technicist and determinist outlook which has proved to be "... both impractical and even absurd" (*ibid*:3). O'Donoghue (1990), through an extensive research project surrounding the development of the Action Ecology materials, describes the social engineering orientations of RDDA approaches to materials development. He ascribes the adoption failure of the Action Ecology materials to technicist, structural functionalist and deterministic approaches to curriculum change and materials development. At the time

O'Donoghue and Taylor (1988:5) predicted that the We Care materials would be unlikely to achieve their potential "... unless participant contact is maximised". A response to this criticism and prediction from Soutter (comm. to O'Donoghue 21-04-1988; CR2.4) reveals the tensions that exist between participant-centred approaches to materials development, and the more widely followed technicist orientations. His correspondence points out how, within an awareness of the dilemmas of technicist and participatory handicaps, the project developers tried to include features (for example the loose leaf format, teacher's guide book, worksheet and resource pages) to "... try to overcome these problems" (*ibid*). In the same communication, Soutter notes:

> ... while I am aware of the *potential* handicaps of a mail order package such as We Care, I am equally - if not more - aware of the handicaps of the workshop approach e.g. the impossibly high cost in time, facilities and funding to reach even a small percentage of South Africa's teachers ... 'We Care' attempts to operate within the realities of southern and particularly South Africa, with a population of more than 32 million people scattered across one percent of the earth's land surface, its education systems slashed into 19 education departments ...

O'Donoghue and Taylor (1988) and O'Donoghue (1990) recommend a change in outlook from technicist strategies of materials development and dissemination, to a more participant-centred engagement with the development of environmental education resource materials. They note that the change required for relevant environmental education and long term fundamental change in formal education may be possible if:

> ... we can co-ordinate our initiatives and support teachers in a sustained process of personal and professional growth towards competence in environmental education; ... [we can] get to grips with many of the past and present weaknesses in the development of resources for environmental education; ... [we can make] ... resource materials already available both more accessible and more effective by facilitating their adaptive redevelopment with teachers in their 'worlds'(O'Donoghue and Taylor 1988:4).

In responding to the position of these authors, Soutter (comm. to O'Donoghue, 21-04-1991) notes that the We Care materials had adopted the principle of flexibility which was to become significant in influencing the further direction of the project:

> ... while We Care is deliberately designed to try to avoid the problems of a workshop structure, the development of new approaches following feedback has not been ruled out

> ... the operating word for We Care [is] flexibility. It is not a 'do and dump' approach ...

Reflecting on this debate, O'Donoghue (comm. to Lotz, 20-06-1995; CR2.5) notes that the shift towards participatory orientations to materials development was not only made by them (O'Donoghue and Taylor 1988), but by others too. He notes that the Shell Ecology Charts, also criticised from a similar point of view in the 1988 paper, are still being sold, and are popular, so "... the positions at the time proved wrong". The subsequent sale of more than 6000 of the 1987 We Care materials and its use in "... the classrooms of thousands of schools, wildlife clubs and other educational institutions in southern Africa" (Schreuder, report to SANF 28-02-1990; CR2.6) also casts doubt on the position at the time. An evaluation report by Le Roux and Schreuder (1990:2) which investigated the value of the We Care materials as a resource for improving pupils' "... cognitive and affective learning, as well as their involvement with the natural environment and its conservation ...", confirmed the value of the 1987 We Care materials as a resource to improve both the cognitions and values of learners. It also showed a positive impact on the teachers and the activities were regarded as a very useful complement to the syllabus (*ibid* 1990:51-55). This evaluation was essentially a positivist intervention[37] which evaluated aspects such as pupil involvement and values through the application of measuring instruments, and a traditional comparison of a control group and a test group. Further outcomes of this research project recommended:

- Training in the application of the package by means of workshops;
- Adaptation of the activities for wider use (for the junior primary school phase and the senior secondary school phase);
- Ongoing development of the project; and
- Continued involvement of SANF and Total (SA) in supporting ongoing materials development (Schreuder, report to SANF 28-02-1990, CR2.6).

Reflecting on the above debate which reveals the "... development of critical new philosophies

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[37] Positivist interventions and research methods have since been widely disputed in environmental education and the broader educational arena. Robottom (1987a), Mrazek (1993), Robottom and Hart (1993a) and Schreuder (1995) offer critiques on positivist research strategies in environmental education.

of environmental education resource production in South Africa ...", Soutter (ZA235 memo, 21-08-1991; CR2.3) notes that these tensions forced the development team to be far more critical than would otherwise have been the case. He notes retrospectively that the importance of this critical atmosphere, the intensity of the debate and the decisions taken at the time was not realised then in terms of the value of the product.

This critical debate surrounding the development of the 1987 We Care materials raised a number of broader issues or questions relating to the development of materials for environmental education. These have become central questions of this research project (see Chapters 3, 4, 5 and 6) and influenced the choice of research question (see 2.3.4), research design (see 3.3) and approach to materials development followed in the We Care Primary project (see Chapters 3, 4, 5 and 6):

- How can materials development processes in environmental education respond to adoption failure (as realised by O'Donoghue 1990), technicist, deterministic and instrumentalist materials development processes (grounded in the RDDA model) and the practice of viewing teachers as technicians (Robottom 1987a, see Chapters 4 and 5)?

- How do the socio-political and other contextual realities of South Africa influence approaches to, and processes of, materials development (Kromberg 1993, see 2.4)?

- Should approaches to materials development be conceptualised as either/or options, i.e. either technicist or participatory (see Chapter 6)?

- What potential do resource materials produced by the informal sector have to supplement the school curriculum and to influence or create change within formal education, teachers' work and the school curriculum (see 4.2, 5.7)?

In accordance with the principle of flexibility adopted for the 1987 We Care materials, the We Care project was able to respond to a request from the teaching community (Soutter, ZA235 memo, 21-08-1991; CR2.3) for materials suitable for different school phases. In 1989 the We

Care Early Years materials (WCEY; DF4) for the junior primary school phase were initiated and the first draft was developed by teacher trainers. The ongoing development was co-ordinated by the SANF and Stellenbosch University, and initially six trainers from six colleges of education were involved, but this dwindled to just two. Soutter (ZA253 memo, 21-08-1991; CR2.3) identified some key lessons for materials development that came out of the experiences of developing the WCEY materials:

- The use of colleges for resource development should be questioned as this can end up with trainee teachers with not much experience undertaking the development;
- A group of two may be insufficient to enable the critical dialogue and review to take place which is essential for resource development; and
- The group doing the work must be aware of the major trends in the philosophy of resource development.

The WCEY materials consisted of over 100 varied activities within a structure of seven concepts (see figure 4.2). A limited number of WCEY packages were sent out for review by individuals in the teaching community (CR2.7). An analysis and interpretation of the responses (AM1; CR2.8) according to the categories provided in the evaluation letter which requested responses (Soutter, 17-05-1990; CR2.7), revealed the following weaknesses:

- The conceptual content was incomplete and a range of topics were not included (RL3, RL5, RL1, RL7);
- Activities were forced, repetitive (RL5, RL7, RL8) and needed to be reworked with additional features (RL6, RL5, RL3);
- The style of the pack needed to be more user friendly (RL5), with more teacher information and questioning (RL2, RL5, RL6, RL4);
- Illustrations needed to be reworked to be more functional (RL2, RL3, RL5, RL6);
- The pack was seen to exclude second language speakers (RL5) and elements of stereotyping and racial/rural exclusion were identified (RL3, RL5, RL6).

In general, the reviewers thought that the manuscript needed to be reworked (RL1, RL2, RL5,

RL6, RL7, RL8) to be more suited to the junior primary school phase and to be more user friendly. Despite serious criticism of the WCEY materials, there was unanimity on the value of such a resource, if revised, for the junior primary school phase which sorely lacked such materials (AM1; Soutter ZA235 memo, 21-08-1991). In a review of these materials which I submitted as part of a B. Ed assignment in 1991, I noted that the materials were incomplete, many issues had not been addressed, the materials lacked coherence and would benefit from being reworked (DF5). It was on the strength of this review and the suggestions I made (CR2.9) that I assisted with the editing and reworking of the materials into a pilot version (see figure 2.3) to be trialed and tested in the field with teachers (see Chapter 3). The review of WCEY (AM1; CR2.8) was used to inform a major sub-editing of the package, using the same basic structure which was found to be valid[38] (Soutter ZA235 memo, 21-08-1991). The project was handed over to Share-Net at the end of 1991, who undertook to print and publish 1000 copies of the We Care Primary pilot materials (see 3.2.1). Taylor (progress report to SANF, 11-11-1991; CR2.10) confirmed the need for further trialing of the We Care Primary pilot materials in classrooms and by non-formal practitioners for the following reasons:

- To expose practising teachers to the materials;
- To enable the activities to be improved;
- To ensure that the materials reach as wide an audience as possible;
- To enable practising teachers to add, and reference, other relevant materials; and
- To enable teachers to participate in the development processes so as to ensure that the materials are, in fact, widely used.

It was at this stage that I became involved with the project in a research capacity, and application was made to Share-Net and the SANF (CR2.11) to support a Western Cape materials development research process which would continue and extend Stellenbosch University involvement and interest in the project. The research project was therefore planned to focus on the trialing and testing of the We Care Primary pilot materials, in collaboration with Share-Net and practising teachers.

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[38] Later reflections on the structure of the materials proved to be different (see Chapters 4 and 5).

Thus, at the time when I entered this project with the view to using the materials as 'capital' for trialing, testing and redevelopment, the participatory nature of the research had already been plotted by the many socio-political and historical shifts, contextual and pragmatic factors which were at play in South African environmental education at the time. These all combined to provide the context of the project. In a report to the SANF (11-11-1991; CR2.10), Taylor summarises the contextual influences and suggests a direction for the future of the project:

> As we move towards a new political dispensation for South Africa it is of paramount importance that environmental education too adheres to the principles of democracy and the participation of teachers and pupils in the development of curricula ... The We Care Primary initiative ... is a new initiative that could be produced within such a participatory orientation. This report ... suggests a future direction that will involve hundreds of people in a redevelopment procedure that could contribute to an improved collection of activities and at the same time involve large numbers of teachers and pupils in environmental education activities.

### 2.3.4 Defining the research question

The above socio-historical exposition and clarification of perspectives, the description of the shifts and tensions surrounding the development of the earlier 1987 We Care materials, and their subsequent influence on the further development of the We Care Primary project, clearly illustrates the position of Gitlin (1990:454) who draws attention to the socially located nature of research questions when he notes that "... (t)he questions we ask are never simply our own. Instead, they reflect an ongoing negotiation among the influences of material conditions or contexts, cultural norms or self".

Key influencing factors which helped to frame the nature of the research question for this study could be summarised as follows:

- The need to respond to the environmental crisis in ways which would not re-enact the 'grand narratives' of modernism (see 2.2.2, 2.2.3 and 2.2.4);
- The emergence of a strong critique of the RDDA approach to materials development in South Africa and elsewhere (see 2.3.2);
- The emergence of developing participatory and collaborative orientations to materials

development in South African environmental education (see 2.3.2 and 2.3.3);

- The particular history of the 1987 We Care materials and the recommendations for ongoing development of the project (see 2.3.3); and
- The context in which the materials were being developed (see 2.2.3, 2.3.2, 2.3.3 and 2.4).

The research question was therefore defined to reflect a concern with teacher participation in the materials development process and read as follows:

> The development of environmental education resource materials for junior primary education through teacher participation: the case of the We Care Primary materials development project (see CR1.1).

An understanding of the broader context or macro-context of junior primary education in South Africa provides further contextual significance to the research question, support for the chosen research design (see 3.3) and insight into the direction and unfolding of the project (see Chapters 3, 4 and 5).

## 2.4 A BROAD CONTEXTUAL OVERVIEW OF JUNIOR PRIMARY EDUCATION IN SOUTH AFRICA

### 2.4.1 Junior Primary Education: a sketch of some contextual realities

In providing a conceptual exposition of the contextual realities of junior primary education as macro-context for the project, I briefly explore the history of these contextual realities, and highlight some of the more significant challenges facing educational transformation for this phase. I map these challenges as sites of change and transformation in junior primary education, and see these as possible pathways towards educational transformation[39].

Many of the roots of the inequalities, divisions and resulting high attrition (dropout) rates in the junior primary school phase (Motala 1993:4) can be traced back to the passing of the various

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[39] See Chapter 4 for an analysis of the emergence some of these challenges as sites of transformation and research within the We Care Project.

apartheid education acts during the 1950s and 1960s. Each of the National (white) Education Acts of 1953, 1963, 1965 and 1967 respectively sought to institutionalise Christian National Education (CNE) principles and to bring education for each 'population group' under central control (Christie 1991). These policies were designed to strengthen Afrikaner hegemony in the cultural and political spheres (Tikly 1993:10). Recourse to modernist arguments of 'scientific'[40] forms of rationality (an ideologically grounded scientism) which "... formed the interpretative grid around which norms concerning the ways individual groups may be classified and what might constitute a 'correct' policy ..." (*ibid*) were defined in the ensuing development of apartheid ideologies and the resulting influence on educational policies and practice[41].

Explicit policies of discrimination have caused the provision of education in South Africa to be characterised by gross racial inequality, unequal financing and glaring urban/rural disparities. These are partly the result of features of modernity such as determinism and technicism entrenched in western education (Arnowitz and Giroux 1991; Robottom 1987a; 1987c; Schreuder 1995; Stevenson 1987)[42], and partly the result of the hegemonic ideologies[43] of apartheid (Schreuder 1995:2). King and Van den Berg (1994:2) note that the history of primary education in South Africa is a history of neglect that predates the coming to power of the

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40 Higgs (1994:15) points out that science is not necessarily neutral in respect of ideology and that science can be misused for ideological purposes as "... a means of controlling what is permitted to count as knowledge in maintaining relations of domination".

41 Comprehensive accounts of the way in which the ideologies of Christian National Education and its philosophic method (fundamental pedagogics), influenced education in South Africa can be found in a variety of South African writings on education (Christie 1991; Davidoff *et al.* (eds.) 1993; Flanagan (ed.) 1994; Higgs 1994; Kruss and Jacklin (eds.) 1995; Mc Gregor (eds.)1992; Nassen and Samuel 1990; NEPI 1993; Tikly 1993 and others). Further insights into the nature of Bantu Education can also be gained from these readings.

42 Arnowitz and Giroux (1991:58) note that "... to question the most basic principles of modernity redefines the meaning of schooling, and also calls into question the very basis of our history, our cultural criticism, and our manifestations and expressions of public life".

43 Burbules (1986) argues that ideologies become hegemonic when they monopolise the range of social and political discourse, and when they constitute the unquestioned assumptions of a society. Ideologies are institutionalised and insinuated by schools, public speakers and the media, a process of great subtlety and complexity. Examples of hegemonies are class, sexism, racism, religion, nationalism.

National Party in 1948 by a century or more. The education problems facing the primary education sector in South Africa - inefficiency, unqualified teachers, rigid and outdated curricula, weak and insufficient instructional materials, lack of curriculum development and materials development skills, and high teacher-pupil ratio's - are not unique to South Africa and affect many countries elsewhere. These problems, combined with the fact that a recent official estimate (Marais 1993, cited in Motala 1993:5) showed that fully two million children of school age[44] are not in school, provide significant challenges for educational change and transformation in the junior primary school phase. These challenges are further extended by the fact that only some 2,04% of South African children in the 0-6 age cohort receive pre-school education (Van den Berg and Vergnani 1987:4). However, it is not only access to education which is high on the agenda for educational transformation, but the *quality of classroom practice* (Baxen 1995; Flanagan 1995; King and Van den Berg 1994; Lenyayi 1995) and the need to find ways of addressing the attrition rates of pupils in this phase. King and Van den Berg (1994:4) see the need to address the attrition rates of pupils, and the provision of quality education in the junior primary school phase as central to educational transformation and emphasise the critical nature of this by noting:

> The attrition rate of African primary school children constitutes perhaps the major crisis in schooling in South Africa today, for it both manifests the politics of inequality over several decades and adds to the pressure on a collapsing system.

King and Van den Berg (1994:5) extend their argument and emphasise that the greatest challenge for educational transformation in South African education lies not at a senior level, but *at junior primary school level*, by noting "... the failure of more than a quarter of all those admitted to the first year of schooling to proceed immediately to the second year" (see also Flanagan 1992, 1994; Lenyayi 1995; Motala 1993; Taylor 1989). This extract from Macdonald (1991:i) offers further insight to the challenge for junior primary education:

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[44] Hartshorne (1990, cited in Motala 1993:4) notes a very conservative figure as being two and a half million. This figure refers mostly to black children, and it contrasts sharply with the nearly universal enrolment of white children throughout the country. The chief explanation for the limited access of African children to primary education lies in the lack of compulsory education and educational provision for such children.

> Almost one in four African children who enters grade one does not reach grade two the following year; half of all African children do not graduate from primary school in the minimum seven year period. An alarming number of these children are lost to schooling, without attaining functional literacy: it is estimated that, apart from those who do not attend school at all, the system produces one third of a million illiterate children.

Many authors working in the Early Childhood Development (ECD) field note that the attempts to make the at-risk children more 'school-ready' may compound the issue, and argue that the problem may rather be the inability of the schools to be child-ready (Bloch 1994; King and Van den Berg 1994; Short 1992; Smith 1994). The inability of schools to be 'child-ready' is ascribed to multiple factors (Van den Berg and Vergnani 1987:7), among which is the formalistic, regimented and structured nature of teaching and learning experiences, a pre-determined, structured and inflexible curriculum, the medium of instruction, poor quality materials and the dominance of transmission teaching (Macdonald 1991:i), emphasising the way in which features of modernity such as structural functionalism, technicism and determinism have become entrenched in our systems of schooling (see 4.2 and 4.3).

The high attrition and repetition rates between grade one and standard two obviously impact on the overall literacy situation in the country. NEPI (1993) estimates note that about 15 million people in South Africa have very little or no basic schooling. This situation reflects the devastating effects of *poor or no education* (see figure 2.4). Taylor (1989:7) argues that illiteracy is a crucial contributing element to the deepening of the poverty cycle in industrial or industrialising states such as South Africa which, if seen in the context of deepening environmental issues, becomes a serious matter which should be placed firmly on the agenda of environmental education projects for the junior primary school phase. Illiteracy has a significant effect on the quality of life available (or not available) to people, and contributes to their disempowerment and oppression as illustrated by this quotation:

> Since we are all of us not learned and therefore illiterate, we only depend on this land of our forefathers for living. We have nowhere to go, we can't get employment anywhere. So we can't be assisted in improving our only means of survival, the land, because some of us are unable to pay for the expenses (unemployed male head of an eight person household in Transkei, in Muller and Tapscott 1984, cited in Wilson and Ramphele 1989:138).

Transformational perspectives on reconstruction and development see literacy as an integral part of a deeper understanding of socio-political processes and transformation (Taylor 1989:9). Seen in the light of the emergence of environmental education as a process which is aimed at achieving social transformation (see 2.2.3), concerns about literacy, access to schooling, addressing of the attrition rate and the provision of quality education in the junior primary school phase become critical aspects for environmental education initiatives directed at this school phase.

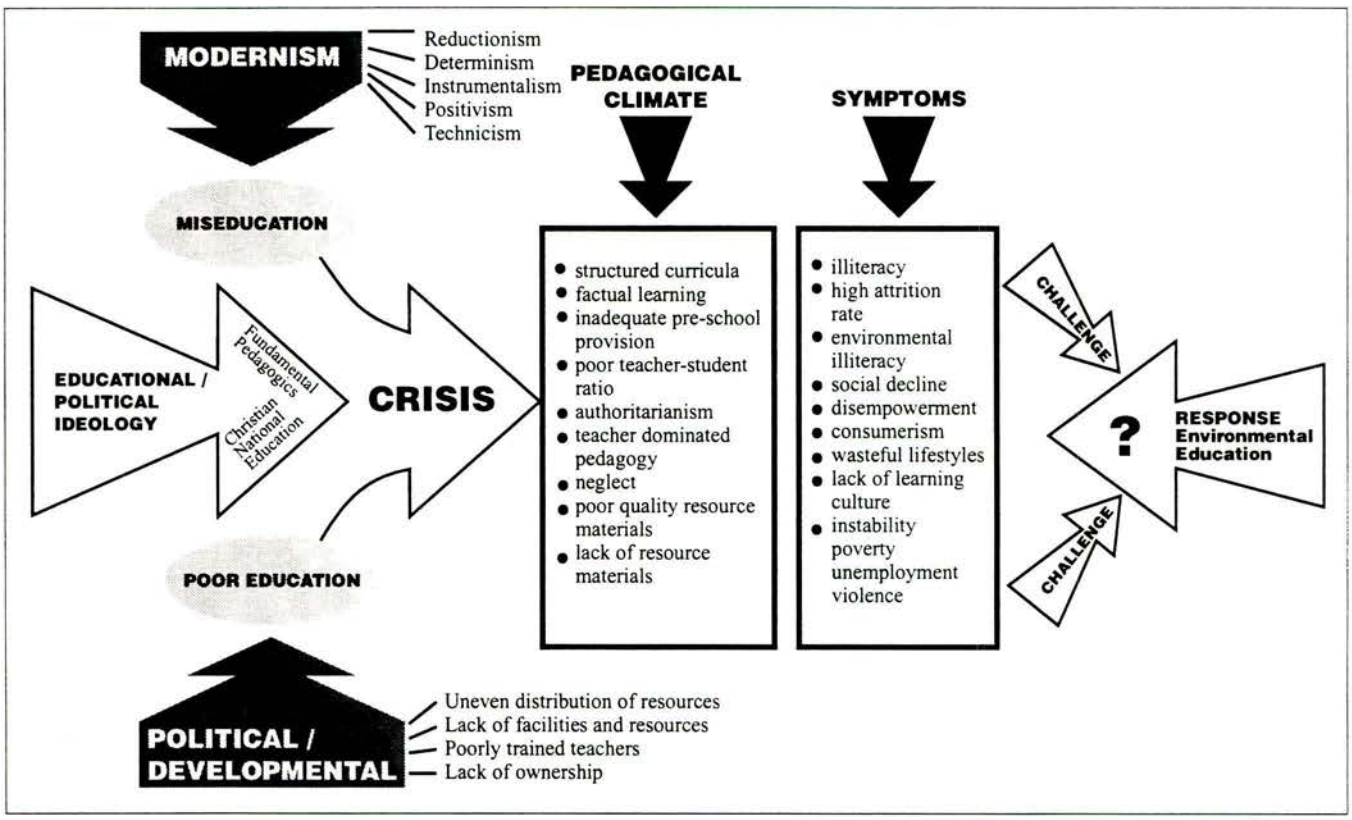


*Figure 2.4* *The implications and effects of miseducation and poor education on the environmental and educational crises in South Africa (adapted from Schreuder 1995)*

Schreuder (1995:1) sees the consequences of *poor education* and scant or no access to education, with its predominantly political roots, as being linked to the deepening of the environmental crisis. He also sees the consequence of modern education[45] as a form of *miseducation* which has

[45] Schreuder (1995:4) sees modern education systems as the product of myths which show "... remarkable parallelisms to the 'grand narratives' or philosophical positions that are the underpinnings of modernity to which most of the global environmental risks can ultimately be attributed".

led to an alienation of people from their environments, environmental illiteracy, overt consumerism, and over-exploitation of natural resources by those who *have had access* to education and who make up the 'literate' sector of our population. In South Africa, the *combination of poor education and miseducation* (figure 2.4) have compounded the role that an education system driven by apartheid ideologies and other modernist ideals have played in contributing towards the "... creation, misinterpretation, and aggravation of local and global environmental risks and crises" (Schreuder 1995:5). Hofmeyer and Buckland (1992:18) support this view by noting that the education system has been shaped by the two distinguishable, but interrelated processes of apartheid and underdevelopment. They see that the

> ... massive social engineering of apartheid has tended to disguise the fact that, in educational terms, South Africa is a developing country with many of the manifestations of underdevelopment ... and as the distortions of apartheid are gradually removed, these features will become apparent and will influence the pace and change in the system.

The challenges facing environmental education (see figure 2.4) in responding to, among other things, the manifestations of underdevelopment, the legacies of apartheid, the rise of overt consumerism and the modernist ideals of techno-scientific progress in a society characterised by gross inequalities cannot be underestimated. Added to this are the challenges facing environmental education in the context of educational change and transformation (outlined by Schreuder 1995; see also 2.2.4, 2.4.3, 4.3 and Chapter 5).

The impetus for educational transformation and the role that environmental education can play in responding to the environmental and educational crises in South Africa, becomes more practicable when viewed from a perspective which highlights these challenges as pathways towards transformation (see 2.4.3). For the junior primary school phase, this implies a concern with the establishment of environmental education programmes and materials which will address not only environmental concerns, but also concerns relating to the development of quality education. This implies transformed curricula, transformation of teaching and learning practice which will be 'child-ready', and will enable access to education and literacy. In this regard, Bloch (1993) recognises the importance of establishing relevance, continuity between phases and the importance of locating learning experiences within the experiential context of young children by stating that:

> The preschool year [and junior primary years] ... can only be valuable if [they] involve appropriate experiences which lead to young children wanting to learn and become literate because they realise that reading, writing [and numeracy] are meaningful for them in the context of their lives (Bloch 1993, cited in King and Van den Berg 1994:6).

The implications for environmental education and environmental education materials for this phase are made explicit through the realisation that environmental education learning experiences should be developed in such a way that they are relevant to the context of the learners' lives. Environmental education for this school phase should provide continuous and ongoing learning opportunities in which young children are able to explore their environments, whilst learning to use process skills (Macdonald 1991:60, see also 4.3.1.2) which enable the acquisition of literacy and numeracy in meaningful and critical ways[46]. Alexander (1990:171), in writing about the nature of pedagogy and methodology in a new educational dispensation notes that "... (l)earning should be more community orientated, involving practical activity rather than the passive absorption of foreign or historical examples"[47]. It seems tragic that

> ... for most pupils primary schooling has been experienced as a series of largely lifeless lessons taught by repetition and rote methods. Primary schooling has not been a time of developing basic intellectual, social and verbal skills by working in stimulating educative environments, but rather a bleak and boring exercise (King and Van den Berg 1994:7).

Much of the blame for this situation can be laid at the door of the pervasive influence of fundamental pedagogics (see figure 2.4) on teacher education (Parker 1981:27). This philosophical position is characterised by many of the cultural productions of modernity: authoritarianism, rationalism, determinism and technicism (Schreuder 1995:4). The NEPI report on Teacher Education (1992:17) agrees that teacher education, and schooling in general, has been dominated by fundamental pedagogics which has prevented teachers from "... developing an understanding of the relationship between education and the context in which knowledge and understanding are created and shared". This created an intellectually harmful situation in which intellectual development was stunted, and educational discourse neutralised and 'depoliticised',

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[46] See CR2.12 for examples of We Care Primary activities which encourage the development of process skills for literacy and numeracy.

[47] See Chapter 5 for an explanation of how the We Care Primary materials have been developed around community concerns with a focus on practical activity and process skills.

leaving teachers without the concepts and experience needed to critically assess their teaching practice or other claims about education (*ibid*, see 4.2). A respondent commenting on the We Care Early Years materials, illustrates the effects that fundamental pedagogics has had on teachers working in primary (and other) educational sectors:

> Critical thought is often lacking in teachers ... [and] ... teachers aren't as informed as a lot of these activities and sections imply ... [therefore you are more likely] ... to achieve the aims by structuring questions for teachers to use or for children to answer on a worksheet (RL4, March 1991).

This review of the macro-context of junior primary education serves to highlight some of the many interrelated factors which contribute to the current pedagogical climate in most junior primary classrooms (see figure 2.4 and Chapter 4). These can be summarised as follows:

- The structured nature of the official curriculum and the emphasis on factual learning;
- The inadequate provision of pre-school education and the lack of continuity between pre-school education (where it exists) and the primary school;
- The poor teacher-student ratio, and the related issue of poor classroom-student ratio;
- The authoritarian nature of so many of the schools which debilitate efforts towards teacher co-operation and often suppress teacher initiative;
- Authoritarian teacher education processes which are dominated by top-down management and lecturer-dominated pedagogy;
- Long standing neglect of the issues of primary education;
- A socio-economic context reflecting instability, poverty, unemployment, violence and deepening environmental issues (see also King and Van den Berg 1994).

King and Van den Berg (1994:9) note some additional factors which contribute to the current pedagogical climate in primary schools:

- The burden of having to learn in a language other than mother tongue or home language, caused by the language policies of Bantu Education (especially from standard two onwards); and
- The extremely poor quality of the textbooks and other resources which teachers have

been forced to use.

The picture sketched here is not a pretty one, and reveals many of the contextual realities of working within the formal education sector. However, it is also clear that there is a need for fundamental transformation of this school phase if we are, in any way, to respond to both the environmental and educational crises in our society. Some of the major challenges facing this phase of schooling, which are mapped here as sites of change and transformation for the junior primary school phase, are:

- Redressing and reviewing of the complex phenomenon of attrition rates and repetition rates as not only in-school factors, but within the broader social, political and economic context of schooling;
- Finding ways to transform the current junior primary school phase in such a way that it is *child-ready*, and can provide access for the large numbers of children who currently do not have access to schooling or literacy;
- Transforming the *quality of educational provision*[48] in the junior primary school phase to provide all children with access to basic literacy and numeracy skills in a manner in which *relevance*, *continuity*, and *enjoyment* provide the cornerstones of learning opportunities. These learning opportunities need to be grounded in the experiences of young children in the early years of primary school (Baxen and Lotz 1994; Biersteker *et al.* 1994; King and Van den Berg 1994; Macdonald 1991); and
- Transforming the junior primary school phase in a way which *includes* the participation of teachers, parents and learners in efforts to democratise schooling, the school curriculum and classroom practice;
- Developing appropriate resource materials for use by teachers and learners which

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[48] The term 'quality' is commonly used in the current educational discussions and literature. The term is used in significant policy documents (the ANC Policy Framework, the RDP and the 1995 White Paper on Education and Training) with little indication of how 'quality' education is to be achieved. An emerging argument, supported by a growing body of research, is being formulated around the ideal of the study of schooling to move beyond the effectiveness paradigm, and views quality as concerned with the processes of teaching, learning and resourcing at school level. However, quality remains a fairly elusive concept, and is currently considered mainly in the deficit mode i.e. it is what the education system does not have (Baxen 1995; Chisholm and Motala 1994; Flanagan 1995; Meyer 1995).

> support and initiate relevance, continuity, enjoyment and participation in meaningful learning experiences. The development processes should encourage the participation of teachers and support the principles of democratisation of junior primary curriculum development. Access to materials, and the creating of conditions in which teachers are able to make critical and informed choices about the materials they use are key factors which relate to the provision and use of appropriate materials in this school phase (see Chapters 3, 4 and 5).

Although the latter pathway towards transformation will inform the major direction of the We Care Primary Project (see 2.4.3), Chapter 4, 5 and 6 will illustrate how the pathways towards transformation outlined above are interrelated and interdependent. As social transformation is central to environmental education processes (see 2.2.3) and the need for transformation of the junior primary school phase very apparent, the We Care Primary materials development project is firmly located within the current national, global, provincial and local shifts, trends and debates within educational and social transformation.

### 2.4.2 Participatory orientations to educational change: an overview of current debates

Fundamental changes in the educational arena are taking place in response to the fundamental societal shifts which have been given impetus by the recent political history of South Africa and the creation of new structures and policies. Coupled to this is the need for educational transformation to contribute to the improvement of quality of life for many South Africans within the constraints of sustainable living patterns, increasing demands on the country's resources and the redressing of inequalities. The call for educational transformation has gained the status of a national priority. The ANC policy framework (1994:8) makes a commitment to managing change in a purposeful way, "... through a responsive and participatory consultative process, involving all the main stakeholders, working within an agreed framework of principles and objectives". This policy framework strongly supports the principles of democracy in teaching and states as one of its principles that:

> Education and training policy and practice shall be governed by the principle of democracy, ensuring the active participation of various interest groups, in particular

> teachers, parents, workers, students, employers and the broader community (ANC 1994:4).

The 1995 White Paper on Education and Training supports the transformation of the education system through the principles of democracy, and notes that the Ministry of Education is "... committed to a fully participatory process of curriculum development and trialing, in which the teaching profession ... plays a leading role" (White Paper 1995:23). The new government is faced with the demands of both quantitative expansion and qualitative renewal, and is constrained by the need to continually consider limited budgets. Creative opportunities for implementation of new policies and classroom practice exist, *if participatory and partnership approaches are employed to harness the practice, experience and financial resources of those outside of government, and in the realm of civil society*. Key principles of the Treaty on Environmental Education for Sustainable Societies and Global Responsibility (CR2.2) add support to these national calls for democracy in transformation processes. The Treaty clearly states that:

> Environmental education must facilitate equal partnerships in the processes of decision making at all levels and stages ... Environmental education should empower all peoples and promote opportunities for grassroots democratic change and participation. This means communities must regain control over their own destiny (EJNF Newsletter no.2, Winter 1994).

Normalising schooling and creating a new culture of teaching and learning (Maseko1994) requires the *commitment of teachers and communities to the process of social transformation* as an enabling condition for the improvement in schooling and an enhanced quality of life (Chisholm and Motala 1994:9). While the 1995 White Paper is supportive of participatory processes to transform curricula and develop policies, its major shortcoming is that it does not outline the institutional mechanisms, structures and resources which will ensure effective participation in the formulation of national policies by constituencies and bodies outside of government.

Samuel, Naidoo and Suransky (1992:8) recommend that serious attention be given to the question of teacher participation in curriculum [and materials] development in the construction of a new education system, and that the role of the teacher should not be too narrowly defined.

They recommend that alternative roles for teachers need to be explored which will enable them to contribute to the process of transformation in education (see 4.2).

Together with the conceptualisation of a new role for teachers, the challenge of transforming curricula in junior primary education (and primary education generally) is vast (Baxen and Lotz 1994; Flanagan 1992, 1995; King and Van den Berg 1991, 1994; Lenyayi 1995) and directly involves the reordering and transformation of some of the major principles of junior primary education (see CR2.13 and CR5.35). Radical transformation of the current philosophy of education (grounded in modernist ideals and apartheid ideologies) is needed to transform the processes and terms of education for today's society (see 2.2.3), and to provide a framework for collective action and purpose. Transformation requires a lot more than simply describing the ideal governance structure. It requires careful consideration of the processes that will lead to the transition, the establishment of *conditions which enable transformation to begin*[49] (see 5.4), and it requires commitment from all role players (see 5.6 and 5.7)

Moves towards participatory orientations to educational transformation are to be seen on the ground in examples of primary education projects such as PSP (Primary Science Project); the Molteno project; MEP (Maths Education Project); PREP (Primary Education Programme) and many others (Levy 1994). Hargreaves (1994) and others working in the field of educational transformation (Davidoff 1993; Flanagan 1992; Macdonald 1991; Mc Naught and Raubenheimer 1991; Robinson 1994; Walker 1989) recognise the need and advocate for a move away from the rationalist, managerial approaches to change which view teachers as the technicians who need to be 'trained' to implement innovations. They all advocate participatory and action research orientations to educational transformation.

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[49] In a paper on the potential for teacher development and transformation in a contemporary society, I develop an argument in support of the establishment of the *conditions* needed for transformation to take place. I maintain that it is imperative that, during the phase of transition which our country is currently experiencing, we be vigilant regarding reform efforts, and that we continue to strive for radical transformation of teachers' work, curricula and teaching and learning practice (Lotz 1995a).

### 2.4.3 Mapping possible pathways towards transformation for the We Care Primary materials development project

The mapping of an unfolding and emerging trend in South African education which appears to be coming out in support of transformation in education, and which views the role of the teacher and the principle of democratisation of schools and curricula as central, helps to provide clarity on the potential role of the We Care Primary project in educational transformation in the junior primary phase. The We Care Primary project was conceptualised (see 2.3.3) as a set of resource materials which could expose teachers to alternative ways of teaching young learners (see also 4.3). A review of the historical development of the materials (see 2.3), the research question (2.3.4), the aims of the project (see 1.6) and the theoretical orientation (see 2.2, 2.3, 2.2.4 and 3.3) reflect a central concern for teacher participation in the materials development process. This reveals the transformative potential and socially critical nature of the project (see 2.2.4 and 2.4). To clarify the transformative potential of the project as a means of setting the direction for the research process, I conceptualise the possible praxis of the theoretical orientation and the socio-historical and pragmatic aspects of the project as possible 'pathways towards transformation' for the We Care Primary project in junior primary education.

The assumption of socially critical environmental education which views knowledge as constructed through social interaction and thus as historically, culturally, politically and economically located (Greenall Gough and Robottom 1993:305), enables critique-in-action of the historical and social context in which knowledge is created. Socially critical environmental education supports an emancipatory aspiration by seeking to enlighten and empower individuals to embrace the democratic ideals needed for decentralised curriculum and materials development processes (Fien 1993a, see 2.2.4). A possible pathway towards transformation, located within the concern of the critical orientation of the We Care Primary project, is thus *to engage teachers in collective critique of the dominant cultural patterns visible in the culture of schooling and the environmental crisis* (see 2.2.2, 2.2.4, 2.4.1). Through the materials development process, alternatives that support greater social justice and enhance human potential can possibly be identified and acted upon (Stevenson 1987:7). At the start of this research project, the concern for teacher participation was therefore *to engage with and support*

*teachers to enhance and reconstruct their daily teaching activities through critical reflection and dialogue about their teaching and learning context, curriculum development and other aspects of schooling.* 'Capital' for these encounters was to be provided through critical review and encounter with the ideas, principles and activities of the We Care Primary pilot materials.

A further possible pathway towards transformation conceptualised for the project was located in concern for *a responsive process of addressing environmental issues and problems from within the school environment*, which could become possible through *active participation of learners* and *ongoing critical reflection-in-action by teachers*, stimulated by the use of, encounter with, and further development of the We Care Primary pilot materials. Through this process, the project could possibly stimulate *the development of materials which would provide for quality, variety and choice* in junior primary educational resource materials. Through their nature, and through *grounding the development of these materials in teacher and pupil experience*, the materials could address the *concerns for literacy and numeracy acquisition* in the junior primary phase. The project thus set out to support teachers in considering *environmental education curriculum development* by encouraging teachers to *act on, critically evaluate* and *use* those aspects of the materials which they considered appropriate to their local environments and school context (see 3.4). Through critical analysis of the materials for relevance, local issue-based content and flexibility, further aspects of curriculum development for this school phase could possibly emerge.

The participatory development process of these materials could *challenge the managerial, hierarchial and deterministic approaches to materials development and change* of the more traditional RDDA model, and as such could possibly represent a pathway towards transformation for materials development initiatives within the South African context, currently characterised by poor quality materials and technicist strategies of materials development and provision.

The conceptual exposition in this chapter provides a perspective for the mapping of these possible pathways towards transformation for the We Care Primary project in junior primary

education[50].

## 2.5 CONCLUDING COMMENT

At the outset of this research project therefore, the project direction was inextricably linked to the contextual realities of South African education, shifts and trends in environmental education, the pedagogical climate of junior primary education and the ideals of social and educational transformation described in 2.2, 2.3 and 2.4. The possible pathways towards transformation which the We Care Primary materials development project was to follow was therefore mapped as a response to both the environmental and educational crises, and as a continuation of an environmental education materials development process which had began in 1987. The direction for phase one of the research project was set.

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[50] See the guiding principles (CR2.14) of the project which were developed in 1993 from an analysis of the phase one reflections (Chapter 4). These act as confirmation of the transformatory objectives conceptualised here and provide some insight into some of the pathways of transformation which the project actually followed. See also (Chapters 4, 5 and 6) for an insight into the complexity of educational transformation.

# CHAPTER 3

# THE DEVELOPMENT OF A PARTICIPATORY ORIENTATION TO THE TRIALING OF THE WE CARE PRIMARY PILOT MATERIALS

> *I view reality in terms of process, and life as a journey of learning and change. A quest orientation to research, an openness to participating fully in the life of the study, was the attitude I viewed to be in harmony with a process model of reality* (Dudley 1992:328).

## 3.1 INTRODUCTION

The socio-historical location of the research project and the pathways to transformation outlined in the previous chapter provide the vision, direction and framework for the choice of research design and development for this phase of the project. In this chapter I allude to research as a voyage of discovery (Kirby and McKenna 1989:43). The chapter describes how I mapped and charted the process of exploration. Like a traveller embarking on a journey into unmapped terrain I needed to create my own map, define the duration of my journey, and decide on the routes which I wanted to take. I needed to make choices about which parts of the landscape were more important to explore, and I had to design ways and means of recording what I observed and did on my exploration. Because I was hoping to share this journey with others, and not travel alone, I needed to find travel partners who were interested in embarking on a journey which would involve collaborative planning to redesign the maps and boundaries of our trip as it proceeded.

To reflect a 'quest orientation' (Dudley 1992:328) to research, one needs to be a good explorer and the skills of good observation, good listening, a clear mind and a vision of the field to be explored are vital. The first challenge presented to me, as novice researcher, was deciding how to use and sharpen these skills in designing the boundaries of what was to be studied, the rules

that were to be used, and how best I could explore the research question within defined, but not fixed, boundaries. For the purpose of this research project, I was attempting to chart the process of embracing teacher participation in the trialing of the We Care Primary pilot materials within the broader boundaries of socially critical environmental education (see 2.2.4) and educational transformation in South Africa (see 2.4).

The theoretical orientation which underpins this research (see Chapter 2 and 3.3.1) provided a metatheoretical justification[1] for the action research design. This research design was also chosen to reflect a congruency with my world view (made visible in 2.2, 2.3 and 2.4) and the subject to be studied (see 2.3.4). The theoretical orientation to the research, and the planned research activities reflected my conviction that *any research must be significant in a broad social context*, must *contribute in some way towards the empowerment of self and others in the building of community*, and must, as far as possible, *be able to contribute something of practical worth to classrooms in an impoverished and poorly resourced educational context* (Flanagan 1994:55; King and Van den Berg 1994:9). This conviction was to influence not only my initial choice of the research question (see 2.3.4) but also the ensuing choice of research design (see 3.3.2 and 3.3.3), methods, techniques (see 3.3.4 and 3.3.5) and project actions (see 3.4).

The process of learning to do research whilst trialing the We Care Primary pilot materials is described in some detail. Interactions with teachers and other educators in diverse contexts, the methods of data collection, analysis and triangulation procedures are all interwoven in a reflective description of the research experience. In this chapter, I have tried to make my voice heard (see 1.3.3) as a first time traveller and tourist getting to know new places and experiences. I have tried to make this audible through ongoing reflection on the research process in the context of my growing experience and insight into the praxis of socially critical environmental

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[1] Robottom and Hart (1993b:598) argue for a metatheoretical agenda for environmental education research which is "... an agenda for research into the political theories of the different approaches to research". They extend the argument by noting that different approaches to educational research do not only represent different strategies for data collection but express, and are grounded in, different ideologies (*ibid* 1993b:603). As environmental educators we need to take account of the intellectual tradition in terms of which we justify the adoption of a particular approach to research, as this is likely to influence our way of understanding and perceiving environmental education practice, environmental knowledge, our role as teachers, learners and the power relations within the research process (*ibid* 1993b:598).

education.

## 3.2 PREPARING THE WE CARE PRIMARY PILOT MATERIALS

As this was to be a materials development research project, and as I had chosen to research the further development of the We Care Primary materials, the practical realities of ensuring that I would have materials to work with in the project created one of the first pragmatic challenges of the project. Before I was able to design the research process, or begin the trialing and testing of the We Care Primary pilot materials with teachers, the materials had to be finalised and prepared for dissemination by Share-Net[2]. This seemingly technical matter, proved to be a rich experience which, upon reflection (see 3.2.2), had a significant impact on the project development as a whole, and the further development of the We Care Primary materials.

### 3.2.1 Editing and development of the We Care Primary pilot materials

The history of the We Care project, and the concurrent shift towards participatory orientations to environmental education materials development had a significant influence on the way in which the We Care Primary pilot materials were to be developed (see 2.3). The final draft of the We Care Primary pilot materials and the management of the project were handed over to Share-Net in September 1991 (CR2.3). The project funding, printing of 1000 copies, translation of the materials into Afrikaans and dissemination of the materials became the responsibility of the Share-Net Environmental Education Network.

Soon after the materials were received by Share-Net for further development and printing, I was invited to the Share-Net office at Umgeni Valley to spend a week working on the final version of the pilot materials to get them to the ready-to-print stage. The trip to Natal in December 1991 included a collaborative planning workshop (CR3.1) with Share-Net and the Natal Parks Board staff. The aim of the workshop was to make decisions about the further development of the We Care Primary pilot materials. The outcomes of this workshop were significant in shaping the

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[2] Share-Net is an informal network of individuals and organisations collaborating to produce environmental education resource materials.

format and design of the We Care Primary pilot materials:

- The materials were structured as seven separate booklets which could be filed in a resource file;
- Cross-referencing of other environmental education materials was included as part of the text;
- An address list of contacts was included on the back cover of each booklet to enable access to additional materials;
- A covering letter inviting teachers to participate in the trialing of the materials was included with a questionnaire inviting feedback on the materials (CR3.2);
- A concept map on how to use the We Care Primary pilot materials was developed at the workshop, and included as part of the covering information (CR3.3; see figure 4.2). This concept map was included in each booklet as a planning tool for teachers;
- A discussion was held to plan the most suitable method of dissemination and trialing. Workshops with teachers were suggested as a good strategy (DF8).

*Figure 3.1* *The seven We Care Primary pilot booklets, designed and printed by Share-Net (1991)*

At the time, these suggestions seemed appropriate, and significantly enhanced the draft materials submitted to Share-Net by the southern African Nature Foundation (now WWF (SA)). An extract from my research journal bears witness to the way in which this experience helped shape the ensuing orientation to the research:

> At first I was extremely intimidated by the unfamiliar field and the wealth of theoretical experience around here, but the more I talked and listened, the more the ideas relating to action research and environmental education made sense to me. I became more and more excited about becoming part of such a *dynamic and practical* approach to education and research, as I am not convinced of the merits of 'before and after' [empirical analytical, positivist] research strategies. Further ideas which made sense to me were the ideas of 'together language' or the value of critical dialogue, and the idea of stimulating reconstructive change within education (journal entry, 08-12-1991).

As novice researcher, about to embark on my research journey, the encounters with environmental educators who had significant experience with materials development, while being intimidating, also generated enthusiasm about the potential of the project. This experience helped to contextualise my choice of research design.

### 3.2.2 Reflections on the development of the We Care Primary pilot materials

The decisions made at the Umgeni Valley workshop were instrumental in influencing both the future development (see 4.4) and use (see 4.3.4.1) of the We Care Primary pilot materials and were to have a far-reaching influence on the project as a whole:

- The 300 booklets which I was to disseminate and trial (which later increased to 500) determined the need to have a number of workshops with different teachers in the Western Cape (see 3.4). The size of the groups and number of teachers I was to work with, was influenced directly by the number of books I had;
- The concept map provided a curriculum development tool which could be used for planning environmental education projects around local issues or topics of local relevance (see 4.3.1.4 and 4.3.1.5; DF83, DF89, DF62-73);
- The cross-referencing to other environmental education materials created an opportunity to expose teachers to complementary resource materials and extended the project's

potential for networking opportunities (AM51, DF26);

- The decision to run workshops with teachers influenced the research design and the ensuing project development (DF55, DF64, DF97, DF146; see 3.3), and later influenced the development of INSET initiatives in junior primary environmental education (DF89, AM37, AM39, DF120; see 5.4 and 5.6); and
- The format of the We Care Primary pilot materials was to influence the format of the redeveloped booklets (see 4.4), and the format of the We Care Primary project packs (see 5.5; figure 2.3; DF158, DF159).

The socio-historical context of the project and the history of the We Care Primary pilot materials were therefore not the only influencing factors on the research design, but the materials themselves had a significant shaping influence on the research process.

## 3.3 RESEARCH PROCESS AND METHODOLOGY

### 3.3.1 Defining an enabling research orientation for participatory materials development

Mapping the emergence of environmental education as a response to the environmental crisis, the emergence of differing and challenging orientations to environmental education within a context of socio-political change in South Africa, the history of the We Care Primary materials development process, as well as the need for transformation in the junior primary school phase (see Chapter 2) all pointed towards the adoption of a participatory, democratic and socially transformative orientation and methodology[3] to the We Care Primary research project.

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[3] Fien (1992:2) notes that "... methodology provides the philosophical framework that guides the research activity, and is described by Van Manen (1975:27) as compromising 'the fundamental assumptions' about the 'general orientation to life, the view of knowledge, and the sense of what it means to be human' that direct the particular mode or method of enquiry in a study. Burgess (1984:2) argues that 'methodology' involves consideration of the research design, data collection, data analysis, and theorising together with the social, ethical and political concerns of the social researcher. Methodology therefore provides the theory behind the cluster of techniques that comprise a research method".

O'Donoghue (1994b:8) describes environmental education as an *enabling*[4] focus for "... diverse 'grass root' processes to inform and transform society ..." and notes that environmental educators will have to clarify the processes of engaged change (research and project actions) and distinguish between *enabling* and *engineering* orientations to environmental education and research. A challenge to work *with in* research processes which were *emergent and enabling,* rather than *imposed and engineered* (see Chapter 6) became a central theme of this research project. In order to locate the research design of this study within the socio-historical context of the project the following became a central question informing the choice of research design and data collection methods:

How would I design my research in such a way that it could *enable*:

- Teachers to participate fully in a democratic materials development process (see 2.4.2, 4.3.4, 5.5);
- Ongoing critique-in-action and development of the materials (see figure 2.3 and figure 5.2; 2.3.2, 3.4.3.1, 4.3.4, 5.5 and 6.3);
- Change in school curricula and teaching and learning practice (see 2.4.1, 4.3.3 and 5.6);
- Transformation of education towards the provision of quality education (see 2.4.3; 4.3.3, 5.6 and 5.7 ); and
- A new view of teacher work which would challenge the technician metaphor (2.4.1, 4.2, 5.4)?

Following the view of Robottom and Hart (1993b) that different approaches to educational research "... do not simply represent different strategies for data collection, but rest on and express different ideologies and replicate different political arrangements and relationships among teachers, students, subject matters, ... and researchers themselves ... " (Robottom and Hart 1993b:594), it was important that I establish a 'politics of method'[5] which would embrace

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[4] To enable means to let happen. The WordPerfect thesaurus describes the word enable as "empower, license, permit, capacitate, equip or facilitate". The word is used to describe an alternative to social engineering.

[5] A 'politics of method' requires that researchers consider the 'political theories' of approaches to research, considering methodology in terms of ideology, rather than in the simply technical terms

the practical question to be answered by this research project which *was heavily reliant on participation.*

A thorough consideration of the ongoing paradigms[6] debate in research and education[7], reviewed against the requirements for a democratic, emancipatory and transformative approach to research outlined by the socio-historical location of the question, led to the realisation that the research design would be best informed from a critical perspective (Arnowitz and Giroux 1985; Carr and Kemmis 1986; Fien 1993a; Giroux 1981, 1985, 1988; Hart 1993; Huckle 1991, 1995; Robottom and Hart 1993a). Kemmis (1988:6) argues that it is

> ... the commitment to organised, active resistance to existing forms of life which perpetuate irrationality and injustice which marks a major distinction between the work of 'critical social and educational science' and that of much 'critical theory' in social science and education.

He makes the point that critical social scientists should not only be striving towards resisting and exposing contradictions and injustices in social life, but they should actively contribute to finding ways of overcoming them (*ibid* 1988:6). Critical social or educational science is, according to Kemmis (1988:7),

> ... directed towards action and it takes action. More than this, it is organised to produce *collaborative action which can then be submitted to reflection and evaluation, and produce further action.* It is learning by doing in collaborative groups - 'critical and self critical communities' ... whose aim is to improve their understandings of the world, their

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of method and technique (Robottom and Hart 1993b:594).

6 Kuhn (1962) identified a paradigm as a constructed world of perception and conception. Paradigms are assumptions about reality that provide the foundation for our reasoning, feelings, values and actions (Dudley 1992:326). In arguing for a paradigm shift away from the dominant social paradigm founded on scientific materialism and mechanistic world views (see 2.2.2), Dudley (*ibid*) notes that themes of a new social paradigm encompass notions of participation, cooperation, and interdependence.

7 For a comprehensive discussion on the paradigms debate in environmental education and environmental education research, refer to Kemmis, Cole and Suggett (1983, see CR2.15), Robottom and Hart (1993a) and Mrazek (1993). For the purposes of this study, a comparison or argumentation of these paradigms was not deemed necessary. A decision was made to contextualise the choice to work within a socially critical theoretical framework, and to justify this choice. (A reflexive review of this choice is offered in Chapter 6).

> practices, *and* (original emphasis) their organisation as groups committed to the development of more rational, productive, satisfying, just and humane forms of life ... *[T]he possibilities of a critical social science ... lie within the process itself* (my emphasis).

The commitment of critical social science to collaborative action which, through a reflection and evaluation process, can produce further action, supported the research aims of this study. I, as researcher concerned with the process of educational transformation and environmental education practice which would contribute to social transformation (see 2.4.3), found support from the theory of critical social science and emancipatory action research for a research design which would *enable* teacher participation in the development of resource materials. Savahl (1993:46), along with other South African action research scholars (Davidoff 1993; Flanagan 1991; Pym 1993; Robinson 1993; Walker 1989, 1993), notes that in South Africa, action research needs to develop its own distinctive characteristics which have "... the potential to turn the attention of teachers to the constraints under which they work and to the broader social effects of that work". Following the critical theory tradition, Habermas (1972, 1984, 1987) constructed the notion of an emancipatory interest which is based on notions of empowerment, rationality, justice and freedom (Hart 1993:110). Hart sees this critical theory as

> ... going beyond the demonstrations of thought and action, as in the notion of the reflective practitioner by Schön (1983) to a socially critical interest which aims at ideology critique, deliberative inquiry, and action aimed at improving both the practice and theoretical understanding of education (*ibid*).

Savahl (1993:47) sees socially critical action research driven by an emancipatory interest as a way in which "... action research, with all its pitfalls and constraints, can provide us with a lever to 'unpack' the complexities of thinking about education ... [which can be used] as a strategy for the transformation of teaching practice". Emancipatory action research is seen by many authors on research methodology to be congruent with the epistemological, ontological and methodological (ethical) assumptions of socially critical environmental education[8] (Hart 1993;

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[8] The epistemological level refers to the nature of knowledge, the ontological level refers to the nature of reality and the methodological level refers to the way in which knowledge is developed (Smaling, HSRC course material, 15-20 December 1993). Socially critical inquiry has been described as ideologically oriented inquiry (Guba 1990). Becoming critical means the development of a conception of reality which ties "... ideas, thought and language to social and

Huckle 1995a; McNaught, Taylor and O'Donoghue 1990; Naidoo, Kruger and Brookes 1990; Robottom and Hart 1993a) which was chosen as the orienting framework for this study (see 2.2.4). Huckle (1995a:11) describes socially critical action research according to the typology derived from the knowledge constituent interests of Habermas (Carson 1989:168) and the ensuing taxonomy of action research described by Grundy (1982), Carr (1985, cited in Whitehead and Lomax 1987) and McTaggart (1991a). This taxonomy of action research proposes three approaches to action research: the technical approach; the practical approach; and the critical approach. For each of these approaches a distinctive view of professional development, theory and practice and social science is described. Huckle (1995a:11) argues that technical and practical action research are primarily concerned with the questions "What can I do and how best can I do it?" and "What should I do and why ought I to do it?". He critiques these forms of action research for asking their questions within the constraints of the situation, and argues that emancipatory or socially critical action research is concerned with questioning the social assumptions on which technical and practical action are based.

Choosing an emancipatory action research design for the study would thus enable the creation of opportunities through the research process for critical and engaged interaction around the development of materials with teachers *within* the context and constraints of teaching in South African junior primary classrooms (see 2.4.1). Through this choice I attempted to "... transcend the positivism of the traditional approaches to research and their management orientations to change ... and the relativism of the interpretivist tradition ... " (McNaught and Raubenheimer 1991:3) by placing the processes of critical reflection and collaborative action at the centre of the research process. By doing this I was making a design decision which "... takes the lead from the research questions that were generated, and makes decisions on method in the light of them" (Gitlin 1990:57).

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historical conditions ... [which implies] social criticism based on notions of power and control" (Popkewitz 1990, cited in Robottom and Hart 1993a:11). This reflects a critical realist ontology (reality takes on different meanings), supported by a subjectivist epistemology (socially constructed knowledge which is about the uncovering of historical, structural and value bases of social phenomena). In turn, this reflects a methodology which incorporates the social, historical and philosophical positions within the practice of research and "... reasserts history, value and ethical choice into the knowledge that we have about social practice" (Robottom and Hart 1993a:12).

Fien (1992:4, citing Deetz and Kersten 1983:148-152) notes that the "... characteristics of critical educational research establishes three tasks for the researcher: understanding, ideology critique and educative action". He sees the emphasis given to any one of these three tasks as being influential in the choice and employment of research methods, and notes the importance of maintaining a congruency between theory and practice (*ibid* 1992:4). He describes educative action as being a process which develops from the goals of ideological enlightenment and empowerment for emancipation, to "... foster the capacity of all participants in the research process to engage in self renewal through participating in educational practices that are free and unrestrained" (*ibid* 1992:4). *This position provides a support for teacher participation in the processes of research and materials development in this study.* Hall (1984:290) sees the emergence of participatory research in 'third world countries' (sic) as a response to a disenchantment with research which distorted the reality and social conditions of people through so-called "... objective knowledge about people ...", and sees participatory research as a means of attempting to "... transform the structures which created systematic injustice". He notes that research activities should result in direct and positive benefits for the people involved, and argues for the democratisation of research which seeks "... concrete ways to be engaged in education and action ... " which work explicitly for social transformation in the research context (*ibid*).

### 3.3.2 Action research: participation, action and change in a research project

Educative action in research and a commitment to ongoing action and reflection within a project are characteristic of action research, which is distinguished from interpretivist strategies by the concept of praxis[9]. Hart (1993:110) argues that 'activist' forms of research (including action research) "... cannot be other than participatory research, requiring collaborative inquiry as a

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[9] Grundy (1987:104-105) explores the concept of praxis in relation to the work of Freire and notes the following characteristics of praxis: (a) praxis does not entail a linear relationship between theory and practice in that the former determines the latter, but is rather a reflexive relationship in which each builds upon the other; (b) praxis takes place in the real, not the imaginary or hypothetical, world and is a form of interaction and means acting with, not upon, others; ( c) the world of praxis is constructed, and praxis is the act of reflectively constructing or reconstructing the social world; (d) praxis assumes a process of meaning making, but it is recognised that it is socially constructed, not absolute.

means of educational reconstruction (i.e. practical transformation of personal and educational levels)". Kemmis (1982:42) sees action research as a form of research carried out by practitioners into their own practice, "... a participatory form of educational research for educational improvement ... [which] contributes to social change". Carr and Kemmis's (1986:162) definition of action research would seem to describe the emancipatory form of action research:

> Action research is simply a form of self-reflective inquiry undertaken by participants in social (including educational) settings in order to improve rationality and justice of their own social or educational practices, their understanding of these practices, and the situations in which these practices are carried out.

Kemmis and McTaggart (1988:5) in a revision of this definition, emphasise the collaborative aspect: "Action research is a form of *collective* self-reflective enquiry ..." (my emphasis) and note that it is most rationally empowering when undertaken by participants collaboratively (Kemmis 1988:42, cited in McNaught and Raubenheimer 1991:3).

Arguments which emphasise the value of the collective, self-reflective and action elements of action research are offered by many authors who see action research as an appropriate inquiry methodology which democratises professional development (Davidoff *et al.* 1993; Elliott 1991a, 1991b; McKernan 1991; Robottom 1987a; Whitehead 1980) and curriculum and materials development (Grundy 1987; McNaught and Raubenheimer 1991; O'Donoghue 1990; O'Donoghue and McNaught 1991; Robinson 1994; Robottom 1987; Walker 1993; Wals, Beringer and Stapp 1990 ). Various authors (Apple 1982; Giroux 1985; Freire and Shor 1987) have drawn attention to the 'de-skilling' of teachers which occurs when they are separated from the conception and development of learning materials, being expected only to execute effectively what others have defined (see 2.3.2). In designing this research, I have sought to provide an enabling orientation with a focus on the involvement of teachers in the development and evaluation of teaching materials, as part of a process of democratisation, empowerment[10]

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[10] The use of the term empowerment in this study concurs with Lather's (1991:3-4) description of the concept. She argues that an emancipatory, critical social science must be premised upon the development of research approaches which empower those involved to change as well as understand the world. In her use of the term empowerment, she opposes the reduction of the term "... as it is used in the current fashion of individual self-assertion, upward mobility and the

and change. Kemmis (1982:43) notes however, that "... action research should not be seen as a recipe for bringing about democracy, but rather as an embodiment of democratic principles in research ...". He, together with other action research authors (Elliot 1992; Grundy 1982, 1987; McTaggart 1991), warns against the misappropriation of action research by educational researchers aspiring to relevance through working in the field with practitioners. They note that many such studies are merely case studies which are paradigmatically opposed to action research, and constitute "... a species of field experimentation or 'applied' research carried out by academic or service researchers who co-opt practitioners into gathering data about educational practices" (Kemmis 1982:47).

If I was to avoid misappropriating action research, I would have to take careful account of the conditions which would constitute an action research process. I would have to create the spaces for praxis to occur and I would have to find ways of enabling a form of collective self-reflection through a research process which would embody democratic principles. A central theme for the research process was thus to enable the empowerment of teachers through their interaction with the materials development process, and through this to develop action to improve their practice. By placing action at the centre of the research process, action research is by definition arguing that educational action matters, and that classroom or other praxis-based interventions can make a difference to the overall scheme of things. Robinson (1994:258) notes that

> ... action research in South Africa can ... be argued to have an inherently political agenda, for it is motivated by a sense that teachers (and students) can assume some control of their lives and, by implication, that we are not bound to be passive recipients of a repressive education system.

The idea of strategic action which is deliberate and considered, undertaken to bring about change, distinguishes the action of action research from other forms of action (Grundy 1982:353). She notes three minimal requirements or 'criteria' for action research which are "...

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psychological experience of feeling powerful ...", and uses the term empowerment to analyse ideas about the causes of powerlessness. In such a view, empowerment is a process one undertakes for oneself; it is not something done 'to' or 'for' someone. "The heart of the idea of empowerment involves people coming into a sense of their own power, a new relationship with their own contexts" (Fox 1988:2, cited in Lather 1991:4).

individually necessary and jointly sufficient for action research to exist":

- The project takes as its subject matter a *social practice*, regarding it as strategic action susceptible to improvement;
- The project proceeds through a *spiral of cycles* of planning, acting, observing and reflecting, with each of these activities being systematically and self-critically implemented and interrelated; and
- The project *involves* those responsible for the practice in each of the moments of the activity, widening participation in the project gradually to include others affected by the practice and maintaining collaborative control of the process (Grundy 1982:353).

An additional condition which is needed for emancipatory action research (which has been argued as the most appropriate form of action research for this study) is that:

- The project involves *dialogue, participation, collaboration* and *collective control* which are supported by the essential element of joint reflection and appraisal in order to re-direct and transform practice (Pym 1993; Savahl 1993).

In describing criteria for action research, Kemmis notes that not all work that passes for action research meets these criteria, that some work will fail to meet these criteria, and that some action research will develop *towards* meeting all these criteria. The nature of this study and the journey of inquiry described here will illuminate how this research project developed *towards* these criteria over a period of four years. Corey (1953:13, cited in Winter 1987:31) notes that "... the very nature of action research makes it highly improbable that the investigator will know in advance the exact pattern of the inquiry that will develop". Winter (1987:31) notes that it will "... not be clear what criteria might be appropriate, since in principle there are neither origins or outcomes to be compared". The 'criteria' outlined here can therefore ultimately only be regarded as broad guidelines. The words of McTaggart (1991:86) served to guide much of what is reported in this thesis:

> Action research is not only about 'doing', it is about *learning by doing*. It is about making changes ... but change is a process not a product: to sustain the process of improvement, we must monitor changes in language and discourse, activities and practices, social relationships and forms of organisation, and in the light of reflection on the tentative products of change achieved so far, steer our next steps in the continuing

process of change (see Chapter 6).

### 3.3.3 Action research cycles of inquiry: an open-ended research design

While action research is not a simplistic process (see 4.3.5, 6.3, 6.5.1), the basic method of action research involves recurrent cycles of three main phases. There is a *planning phase*, in which practitioners identify areas for improvement in their practice, and educational activities are identified where improvement is deemed possible. In the *action phase*, the plan is put into practice in an educational setting. During this phase the practitioners should find ways of monitoring the action. The means of monitoring should provide insight into the practice which, in turn, informs the third phase or *reflective phase*. During the reflective phase, information collected during the planning and action phase is examined and analysed. Robottom (1987a:109) notes that it is important for practitioners to reflect critically on the relationship between their practice (the monitored action) and their subjective view of what is being practised (the personal theory that guides their practice). After due consideration of the results of the analysis of this three phase action cycle, the next planning phase is entered. We can see that action research is mediated by praxis: by practitioners' critical reflection upon their professional activities (Robottom 1987a:109-114).

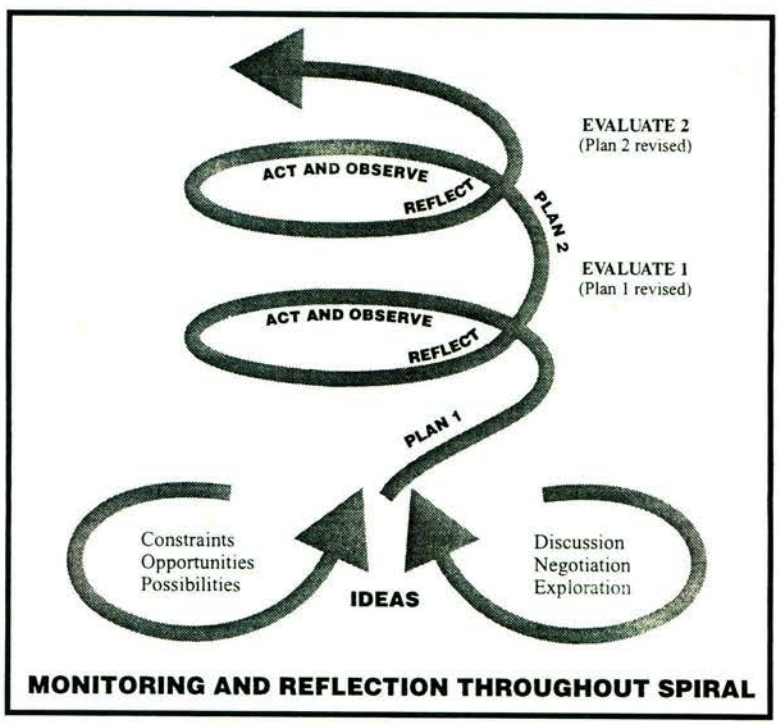


*Figure 3.2 The action research spiral (adapted from Wals, Beringer and Stapp 1990)*

These recurrent cycles of the three phases form the *action research spiral* (see figure 3.2), in which the knowledge from one cycle informs the strategic action of the next cycle (Carr and Kemmis 1986; Elliott 1991a; Huckle 1995a; McKernan 1991; McTaggart 1991a). Flanagan *et al.* (1984:6) note that one cycle of inquiry "... can only be regarded as a beginning ... (w)e doubt whether a single loop should be considered action research at all". Robottom (1987a:111) supports this argument by stating that

> ... it is the action research spiral of successive cycles, rather than a single cycle of three phases (planning, action and reflection) that allows improvement and rationality and justice of the practice itself, of the practitioners' understanding of the practice and of the practitioners' understanding of the situation in which the practices are carried out.

This study represents two cycles of enquiry[11] in an action research process to investigate the development of materials through teacher participation (see figure 3.3).

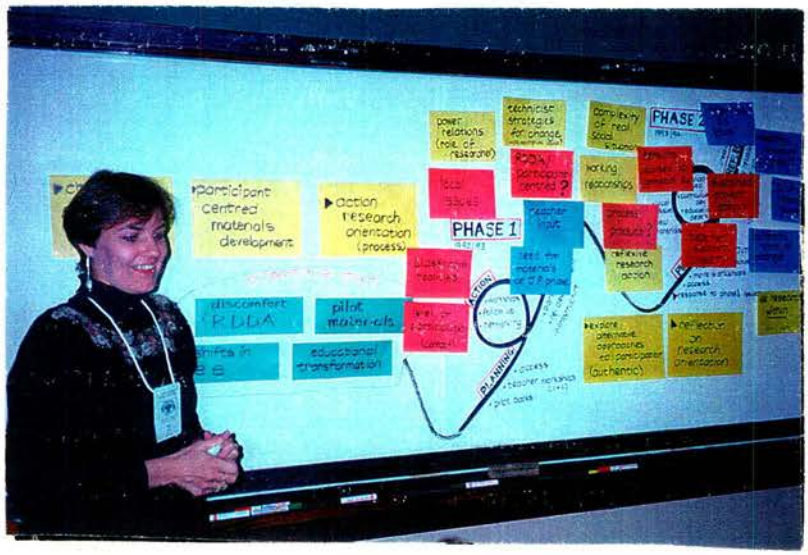


*Figure 3.3* *A presentation showing the broad cycles of inquiry in the We Care Primary project (EEASA '95 conference, Lotz 1995b)*

The first cycle of enquiry is centred on the trialing and testing of the We Care Primary pilot materials (Phase one of this report) and includes a planning and action phase (see 3.3, 3.4, 3.5)

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[11] Whilst this study reports two cycles of inquiry in this research project, they should be viewed only as broad orienting cycles of inquiry. The emerging complexity of action research as multiple cycles of inquiry occurring simultaneously is illuminated in Chapter 5 and Chapter 6.

and a reflection phase (see Chapter 4). The second cycle of inquiry is grounded in the reflection phase of cycle one, and planning for this phase was based on the analysis of data, reflections and emerging issues (see Chapter 4) from phase one. The second cycle of inquiry is both a response to the reflections of phase one, and a development of the action emerging from phase one. Data from the action phase of the cycle are interpreted and reported in the form of shorter 'stories' of lived experience (see Chapter 5) and reflections on these stories in the context of educational change (see 5.7) inform the planning for a third cycle of inquiry (see Chapter 6). The second cycle of inquiry monitors the use of the We Care Primary materials as support for further development of resource materials.

Many accounts of action research demonstrate that action research cannot be reduced to particular techniques or set stages, but rather that a dynamic process is involved which links together problems, theories and methods (Davidoff *et al.* 1993; Elliott 1991; Flanagan *et al.* 1991; McKernan 1991; McTaggart 1991a; Vulliamy *et al.* 1990; Winter 1987). A central issue in any research project concerns the degree of open-endedness of structuring the research design (Vulliamy *et al.* 1990). Wilcox (1982:459, cited in Vulliamy *et al.* 1990:86) regards it as crucial to begin the research without specifically predetermined categories of observation, questionnaires and hypotheses "... since an essential part of the research task is discovering what is significant, what makes sense to count and what is important to observe". The design of the research is therefore intended to emerge as the inquiry proceeds, with each step heavily dependent on all preceding steps (Guba and Lincoln 1989:83). Action research, with its cycles of inquiry, offers an open-ended, emergent framework for structuring emerging, democratic and action-based participatory research projects, and thus provided an appropriate framework for the We Care Primary materials development project.

### 3.3.4 Research methods and techniques

The most important design decision which I made, was to take the lead from the research question and the contextual realities of my situation, and make decisions on method in the light of these. The methods and techniques that were chosen could be described as eclectic - the criteria of choice being to select those methods that seemed most likely to provide most insight

into the research questions and clearer understanding of particular contexts, given logistical constraints (Vulliamy *et al.* 1990:57) and my status as a novice researcher with little knowledge of qualitative research methods and techniques at the time this phase of the research started.

Action research, while making use of techniques which are common to many forms of qualitative inquiry, is not distinguished by particular methods or techniques of data collection, but is characterised by a *methodological process* which is quite different from other methodologies (Stevenson 1995:200). The action researcher, whilst concerned about collecting data in order to act, is also studying the "... intentions, consequences and circumstances of the actions he or she has taken, as well as using the information to influence further actions" (Stevenson 1995:200). Fien (1992:6) notes that it is a complex undertaking to describe research techniques, a situation which is made more complex by the 'openly ideological' nature of critical research processes. In action research, it becomes difficult to distinguish between theory and data, because the processes of generating data through participation, observation and reflection involves selections made by the researcher or participants in the process, and therefore implies judgements which are based on theoretical positions and experience. This echoes Popkewitz's view that research techniques emerge from a theoretical position and therefore reflect values and beliefs about social reality (Popkewitz 1978:29, cited in Fien 1992:6).

Elliott (1992b:70-83) lists a number of data gathering (or practical) procedures which an action researcher may undertake. He recommends that the action researcher make use of a wide range of monitoring techniques, as "... multi-techniques will help to secure a more penetrating grasp of the situation" (Elliott 1992b:77). He also recommends that researchers monitor both the processes of implementation (the action phase) and the effects of the implementation. He suggests the use of monitoring techniques which provide evidence of how well the course of action is being implemented and which provide evidence of the *unintended* as well as intended effects.

With a malleable and open-ended research design, I entered the field to begin data collection. For the first phase of the research project, a wide range of sources provided data for the analysis

and generation of text[12] (see Appendix 1 for a full list of data sources). Theses sources of data are analysed and reported in Chapter 4 and Chapter 5 of this research report (see figure 3.4). In accordance with the nature of action research, some of these data gathering techniques were predetermined (during the planning phase) whereas other sources of data emerged from the context and were generated through the interactions during the research process. During this phase key sources of data were derived from the use of a number of research techniques:

- The keeping of a research journal and diary
- Workshop programmes, workshop activities, teacher contributions from workshops
- Informal discussions with teachers, educators, project participants and critical friends
- Document analysis of project documents, written policy documents, syllabi, textual resource materials
- Photographs
- Incidental video material
- Questionnaires
- Semi-structured interviews
- Focus group interviews
- Observations and field notes

The following section presents an overview of the use of these research techniques (see figure 3.4), and provides some snapshots of insight into the data gathering and analysis in phase one of this project (see figure 3.4). While the techniques specified here are to highlight the research process in phase one, many similar techniques were used in phase two of the research (see figure 3.4). Further insight into the context in which the data was collected and analysed is provided in Chapter 3 (see 3.4) and Chapter 4.

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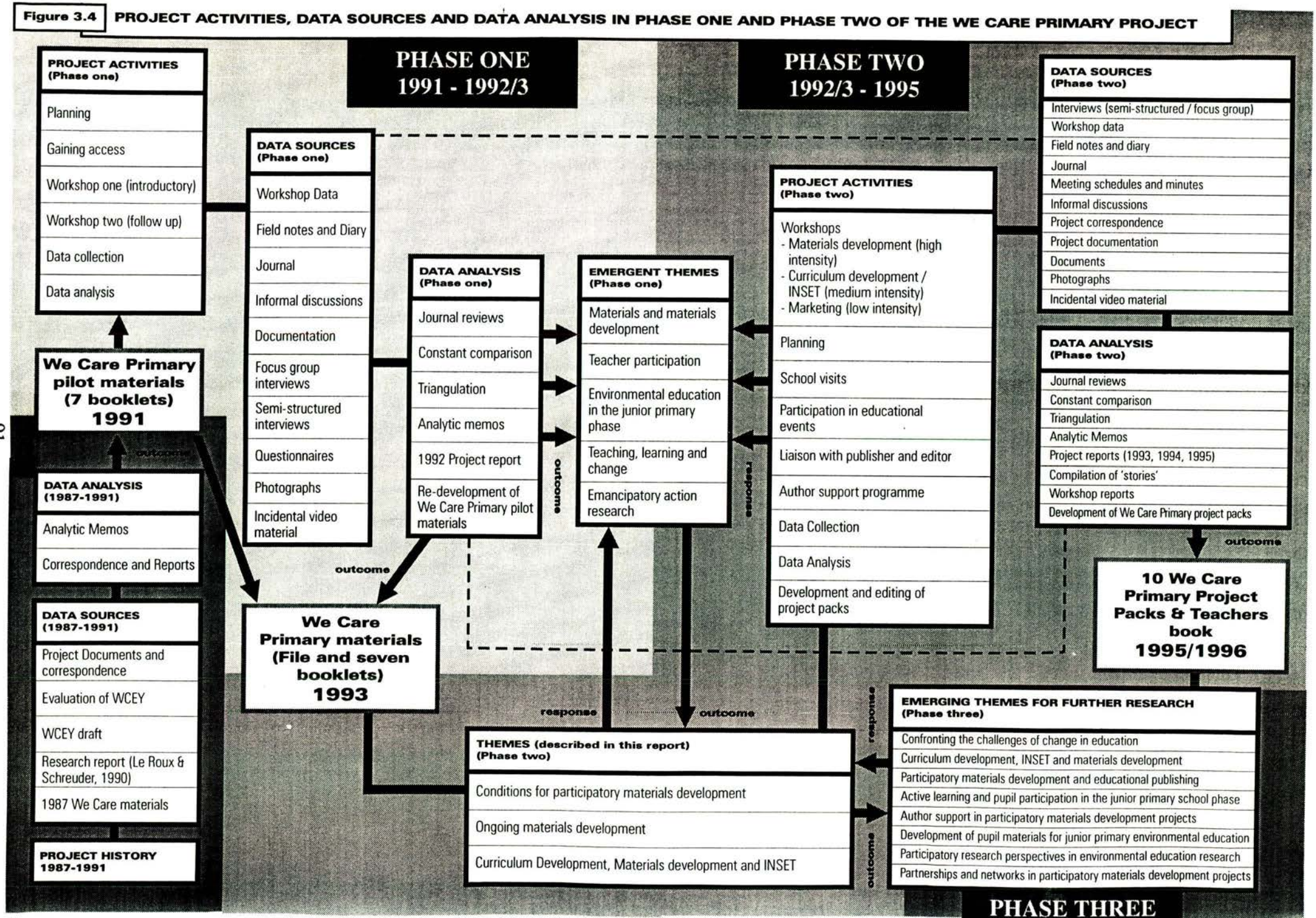
[12] Fien (1992:6) refers to the 'generation of text' in critical research. "Text is a term that may be used to describe data generated and interpreted within a particular theoretical framework or discourse". Referring to the socially constructed nature of text, and thus the socio-historical and political location of text, Fien argues that "... teachers' pedagogical practices may be defined as text". He also argues that the role of the researcher is an important element of the generation of text and that the process of generating text is a shared one, between teacher/s and researcher (*ibid* 1992:6,7).

**Figure 3.4** PROJECT ACTIVITIES, DATA SOURCES AND DATA ANALYSIS IN PHASE ONE AND PHASE TWO OF THE WE CARE PRIMARY PROJECT



### 3.3.4.1 Keeping a research journal

During the first phase of the project I kept a detailed research journal (DF22) documenting all activities and experiences relating to the project activities. Elliott (1991b:77) recommends that such a journal "... should contain personal accounts of observations, feelings, reactions, interpretations, reflections, hunches, hypotheses, and explanations. Accounts should not merely report the 'bald facts' of the situation, but convey a feeling of what it is like to be there participating in it". The journal was kept in such a way that it would provide a solid link to the many concurrent levels of experience that are involved in the process of action research (Meloy 1994:60; see also 1.7 &and 6.5.1). A journal provided a place where the research focus and the researcher's role could meet methodological and analytical concerns. The researcher, as part of the context, is one of many important sources of data (Dudley 1992:330). Through keeping a journal, I was able to link all the different research experiences, and in this way, was able to keep track of not only the project activities, but my own learning process as well. I found it to be a valuable research medium which provided a forum from which I could see key themes emerging and in which I could reflect on facts, thoughts, tacit assumptions, perceptions and feelings. It was the place where method could be combined with feelings, hunches, doubts and ideas. I support Meloy's (1994:60) view of the research journal as "... a place to make explicit questions and concerns for later answering in organising, ... a way of imaging a stream that flows through and surrounds the territory of the research ... a journal can hold your heart".

### 3.3.4.2 Workshops and workshop data

The term workshop is used to convey the conviction that people learn more effectively when actively involved in making sense of their realities and experiences (Harlen *et al.*, cited in McNaught and Raubenheimer 1991:46). The use of workshops has gained impetus as an INSET[13] strategy in South Africa due mostly to the growth of the non-governmental

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[13] INSET (in-service training) of teachers relates to the education and training which they receive once they are in the teaching situation. Thompson (1981, cited in Hartshorne 1986:9) offers a working definition of INSET: "... the whole range of activities by which serving teachers and other educationists (within the formal system) may extend and develop their personal education, professional competence and general understanding of the role which they and the schools are expected to play in changing societies. INSET further includes the means whereby a teacher's

organisations (NGO's), who have been largely responsible for the provision of INSET because of unequal or inadequate INSET provision by the apartheid regime. McNaught and Raubenheimer (1991:47) recommend that workshops should be responsive to the participants, and that workshop strategies should achieve a balance between presentation of information and sufficient opportunities for interactive experience. They should be contextual and not isolated from the actual teaching conditions, make use of different forms of technology and be emergent. Hope and Timmel (1986:6) note that at every "... workshop, seminar or meeting, we need to be constantly sensitive to group needs ... [B]uilding trust, openness and honesty between people is a critical element for community action."

I approached the use of workshops as a research opportunity in which I, together with the teachers, could continually reflect on the practice and value of workshops in the materials development process, and in this way I tried to avoid workshops becoming "... structured, top-down interventionist strategies which operate within a deficit model of development" (McNaught and Raubenheimer 1991:62). Hope and Timmel (1986:6) note that as 'animators' (or facilitators/co-participants) we need to be open to feedback about the way we work and we need to take time to examine our own values and roles (see 3.4.4.2).

The majority of the phase one research activities were centred on a series of workshops for teachers from a diversity of schools in the Western Cape (see table 3.1). Each one of these workshops provided a rich source of data in the form of observations, field notes and samples of teachers' work. I endeavoured, with the consensus of the teachers, to collect as much of the workshop materials as possible (DF14, DF17, and for phase two DF46, DF61-74, DF80-95, DF 121-128). As the workshops were often large (DF99, AM53, AM61), I found it difficult to record the workshop discussions on tape. My own lack of research experience and teachers' lack of familiarity with participant research and data gathering techniques appeared to cause discomfort when I attempted tape recording the workshop discussions, and after trying this technique of data

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personal needs and aspirations may be met, as well as those of the system he (sic) serves". McNaught and Raubenheimer (1991:6) make this definition of INSET more relevant to the South African school system by identifying four major purposes for INSET: (1) qualifying the underqualified teacher, (2) upgrading underqualified and qualified teachers, (3) INSET for new roles and school governance, (4) curriculum related INSET.

collection a few times at workshops, I abandoned it for more informal data collection techniques. Besides the teacher work, I collected samples of all correspondence surrounding the workshops, workshop programmes, workshop planning and evaluation material (DF12-17, see appendix 1).

Analysis of the workshop data took place both during workshops as we refined the ideas which we were working on, and after the workshops. Writing reports on the workshops in my research journal was the first level of analysis applied to the workshop material. Presenting short report backs of the data analysis to the groups at the follow-up workshops provided a second form of analysis. Further discussions with teachers about the emerging trends, issues and aspects of the workshop data during the ongoing workshops provided a further means of refining and analysing the data, as well as a means of generating new data for further analysis.

#### 3.3.4.3 Informal discussions

Informal discussions and brief field notes made during or after these discussions, proved to be a useful data collection technique (AM11, AM46, DF20, DF40, DF105). I often used the sessions at tea time, before or after workshops or during the group work sessions to discuss various aspects of the project with the participating teachers. These discussions provided insight into teaching and learning situations, their feelings about participating in the trialing of the materials, and their experience of the workshops. These discussions were not limited to discussions with teachers only, but were held with other educationists and researchers. I found these discussions invaluable opportunities for critical reflection on emerging questions and research issues. Analysis and reporting of these informal discussions was incorporated into the daily entries of my journal. Janse van Rensburg (1995:55), drawing on the work of Ely *et al.* (1991) and her own experience of using discussion and other unplanned or informal sources of data, discusses the dilemmas of rigorous data collection in situations which were not 'designed' for that purpose. She offers a lesson from her experience which gives substance to my decision to use these informal data sources as valid data in this research process:

> The lesson to learn was to indeed apply the same intellectual effort and commitment to other conversations and discussions which could inform the study, in order to develop

the best possible insights into situations ... This has been one of the best ways in which to learn about environmental education in the region.

#### 3.3.4.4 Collection of documents

Elliott (1991b:77) notes that a range of documents can provide information which is relevant to the issues and problems under investigation. To gain perspective on the nature and status of environmental education in the junior primary school phase, and the relationship of environmental education and environment studies I endeavoured to collect documents which were pertinent to the research question and focus area throughout the research process (DF6, DF23, DF79, DF107, DF112, DF115). I collected junior primary environment studies syllabi, schemes of work, textbooks, junior primary phase documents and policy documents which provided a record of current policy debates. On my research visit to Europe in 1992 I collected a number of international curriculum frameworks, project descriptions, books, slides and other material which I thought may be of relevance to the research question (DF31-41). These documents provided a wealth of reliable information, and provided different perspectives on similar information (Cantrell 1993:97). Where possible, I attempted to share the documents, or information gained from these documents, with teachers during workshop sessions, and on occasion, these documents would become the focus of group discussions. I made regular analyses of the documents, critically reviewing them in the light of their relevance and contributions to the purpose of this study.

#### 3.3.4.5 Photographs and incidental video material

Photographs and video material can be used to collect visual data about situations and events. Photographs constitute a more subjective selection of data than video material. As video technology was not readily available, and as I had no skilled observer available to operate a video camera, I tried, wherever possible, to capture moments and situations with photographs. To a large extent much of the photographic material I collected was incidental (DF145). I found it difficult to attend to photographing workshop situations, while being a full participant, involved in the presentations, discussions and facilitation. The video material collected for this study was incidental, and consists of copies of videos taken by volunteers when a camera and

camera operator were available (DF84, DF78). The filming of a 50/50 programme for national television on the We Care Primary project provided a valuable source of incidental data (DF 49-54). Interviews with teachers were conducted by an 'outsider' and pupil activities and school projects initiated through involvement in the We Care Primary project (see 5.5) were filmed. A request to the SABC to send me all the filmed material captured for the production of the programme was granted, and proved to be a rich and valuable source of data (DF53). Data on the interviews with project participants, the pupil interactions during the activity sessions, and my own performance as researcher and project co-ordinator was evaluated and analysed from the available video material (AM26, AM37).

#### 3.3.4.6 Focus group interviews

Focus groups bring together several participants to discuss a topic of mutual interest to themselves and the researcher (Morgan and Spanish 1984:253). Focus groups should, as far as possible, be timed to last no more than two hours. Interaction between the participants should be informal to stimulate in-depth discussion and reflection on the topic (Folch-Lyon and Trost 1981:444). Folch-Lyon and Trost (*ibid*) suggest that focus group interviews should be introduced by a 'moderator' who should encourage all participants to partake in the discussion. During the follow-up workshops in phase one, I made use of focus group interviews to elicit feedback from the groups of teachers who had been working with the We Care Primary pilot materials. During the introductory workshops, I negotiated with teachers to decide on the methods they would prefer for giving feedback and focus group interviews seemed a popular option. I prepared a series of broad questions to guide the discussions (CR3.4; see table 3.6), but, as can be observed from an analysis of the focus group feedback (CR3.18), these questions were adapted, extended or changed in different situations with different groups of teachers (DF16, DF17).

#### 3.3.4.7 Semi-structured interviews

A series of semi-structured interviews was held with a number of participating schools and teachers during phase two of the project (DF60; CR3.5). Semi-structured interviews allow for both responding to predetermined questions and free responses. Elliott (1991a:141) recommends

that a semi-structured interview begin with the unstructured part, as many of the pre-set questions may be asked without them having to be explicitly raised by the interviewer. This helps to establish a climate in which the interviewee will feel comfortable and will be able to respond more authentically to the questions raised. In action research, the function of the interview is largely to elicit responses relating to experiences of events within the overall strategy of multiple data sources and triangulation.

In the context of this research project, these interviews were conducted as follow-up interviews, two years after the first workshops had been held. The intention was to talk with teachers about the project in general, their participation and how they were using the materials in the schools, and to establish catalytic validity of the project. These interviews were conducted with teachers, college lecturers, students and the Juta marketing staff. Interview schedules were prepared, and in many cases these were different, and were compiled according to the nature of our prior interaction (DF60; CR3.6). Measor (1985:57, cited in Fien 1992:10) notes that the quality of data in interview research depends upon the quality of the relationship between the researcher and the participating teachers, and she recommends that researchers attempt to develop relationships of trust with interviewees, through empathy, sensitivity to context, appearance management and the development of shared interests (Measor 1985:58-63). The interviews which I held were with teachers and other participants whom I had built relationships of trust with over three years of ongoing interaction and participation in the We Care Primary project.

Transcripts of these interviews were made (DF48, DF60, AM26, AM27) and analytic memos were compiled to analyse the interviews. The interview transcriptions and the analytic memos were returned to the interviewees for validation and further comment where relevant (see CR3.7 for sample interview transcripts and analysis). Elliot (1991a:137) sees transcripts as a valuable supplementary record because they assist data analysis as they are easy to circulate for feedback, and enable comparison with other sources of data, and the transcription procedure itself assists reflection about the data. In addition episodic transcripts can be used for deepening the analysis through either private reflection or analytic discourse with others.

### 3.3.4.8 Questionnaires

The inclusion of a questionnaire as part of the We Care Primary pilot materials, (CR3.8) provided an additional source of data, which was used as supporting data for the Western Cape trialing and testing of the materials. 1500 questionnaires were distributed through the Share-Net dissemination process with the booklets, and only 121 were returned. During the trialing process, I discussed the use of the questionnaire with teachers as an optional means of feedback, but the majority of teachers chose a more interactive form of feedback, in the form of focus group interviews. These 121 questionnaires were, however, analysed according to the emerging themes and were used as a source for triangulation of other data (AM10; CR3.9).

A danger in using questionnaires as an instrument in action research lies in 'blinkering' perception as judgments of salience and significance are presupposed in the design of a questionnaire and could favour the values and interests of the researcher (Elliot 1991a:143). A questionnaire for use in an action research project should not be designed "... before one has determined in the light of evidence gathered by other means ... which are the important questions to ask ..." (*ibid* 1991a:143). Ideally it should be constructed collaboratively with research participants in a participatory research context. In the light of the poor response rate to the questionnaires, and in the light of these perspectives, reflection on the inclusion of the questionnaire as part of the We Care Primary pilot materials seems to indicate that it was not a useful research technique to use at the start of the research project.

### 3.3.4.9 Observation and field notes

Walker (1985, cited in Fien 1992:9) argues that there is a need to balance the degree of participation in fieldwork to obtain the trust of teachers with the constant monitoring of the effects of one's participation on these participants. Gold (cited in Fien 1992:9) identifies two interim positions on a continuum of participant observation techniques, and describes these as 'an observer-as-participant' in which the researcher is known as a researcher, but does not participate in the events, and a 'participant-as-observer' which involves being known as a researcher and participating as fully as possible in the ongoing activities of the group. Because

action research is a collaborative form of enquiry, and the intention of this research was to engage in emancipatory action research *with* teachers, I took the role of full participant in the research process and endeavoured to participate in the events as fully as possible (see Chapter 4 for a reflective description of my role in the research process). While I was not involved in an ethnographic study, I used the technique of observation where possible, to supplement my other sources of data, and gain a deeper insight into the research process. Initially, at the outset of the research, I was an 'outsider' working with teachers whom I did not know. The realities, tensions and legacies of the racial divisions in the South African social environment before the 1994 elections had an impact on the establishment of relationships of trust within the workshop environment. As the project progressed, and as I gradually grew to know some of the teachers better, relationships of trust were established (see 4.3 and 5.4). Observation in this study was centred around the workshop activities, and on monitoring my own role within the situation.

### 3.3.5 The research process: analysis and interpretation of data

Doing emancipatory action research in collaborative contexts implies participation in the analysis and interpretation of data. Schensul and Schensul (1991:191) note that participation in the analysis of data, even if it is on an initially superficial level, can "... contribute immeasurably to its interpretation because of familiarity with the context of the project". They recommend that researchers allow enough time for full participation of community researchers in analysis of data and to structure the data in a straightforward manner so that participants can respond to it immediately. Analysis of data therefore implies joint negotiation and decision making in the light of the interpretations gained from the data sources. Robottom and Hart (1993a:67) argue for participation in the data analysis procedure and describe a process of iterative reporting in which successive versions of data sources were distributed among participants for verification and amendment. They also argue that the research agenda should become 'internalised' by the research participants so that participants may maintain a degree of control over the research agenda, and by implication the interpretation and analysis of the data. Lather (1986b:75) notes that the effort to create emancipatory research processes should confront the "... need for methods [and data analysis techniques] that are at least non-alienating, at best empowering". Schensul and Schensul (1991:191) note that participant researchers may initially require some

assistance from academically trained researchers as they approach the data, and note the importance of participants being 'empowered' to access data, as the collection and interpretation of data builds "... information collection and sharing around common issues and problems" (*ibid* 1991:195). They see critical thinking as central to the analysis of data in collaborative research, and note that critical thinking offers orderly approaches to framing, documenting, analysing, and synthesising information. This systematic approach to problem solving in context leads to logical conclusions and new directions for action. Ennis (1987, cited in Schensul and Schensul 1991:196) describes critical thinking as "... reasonable reflective thinking that is focused on deciding what to believe or do ...", reflecting a belief in action and thus forming an integral feature of the reflective cycle of the action research process. The discussion on data analysis which follows details some of the ways in which I, as novice researcher, tried to understand and set in motion a process of collaborative data analysis within the framework of an emancipatory action research design.

#### 3.3.5.1 Data analysis through critical reflection

Analysis of data involves working with the data, "... organising it, breaking it down, synthesising it, searching for patterns, discovering what is important and what is to be learned, and deciding what you will tell others" (Bogdan and Biklen 1982:154). In this regard Patton (1990:372) notes

> ... there are absolutely no rules except to do the very best with your full intellect to fairly represent the data and communicate what the data reveals given the purpose of the study ... This does not mean that there are no guidelines to assist in analysing data. But guidelines and procedural suggestions are not rules...

In critical research the researcher should allow each bit of data to 'speak' in the analysis. Analysis and interpretation of the data should be linked to questions raised from the data. Feedback and confirmation of analytical concepts should be solicited from the research participants and collaborators familiar with the research focus, and in so doing, allow for intersubjectivity and authentic dialogue between all participants (Kirby and McKenna 1989:129). As noted in the preceding paragraph, critical reflection is a vitally important part of the data analysis (Fien 1992:12; Kirby and McKenna 1989:129; Lather 1986a:267). Critical reflection involves an examination of the social reality, and in order to understand fully the data and effect

change, contextual patterns and how they are sustained and controlled must be understood. Lather (1986a:267) notes that "...(a)nchoring theoretical formulations in data requires a *critical stance* (my emphasis) that will reveal the inadequacies of our pet theory, and be open to counter-interpretations."

Finding my way into a process of qualitative and collaborative data analysis in this research project is a story of an uncertain, unpredictable and indeterminate journey into unknown and unchartered territory. The more I became involved in the research process, working with teachers and talking with people, the more data I seemed to be collecting. Time constraints and too few and too short contact sessions with teachers in the first phase of the research project seemed to prohibit teacher involvement in managing and understanding the vast amounts of data being collected. A descriptive record of what was happening in the research project was kept and a keeping a journal proved to be useful for critical reflection on the research process. Analysis started by transcribing field notes into journal entries. The amount of data gathered seemed daunting and I was not sure how to deal with it, and often found myself storing it away for later. However, I progressively designed a system of sorting data into files (see Appendix 1) which were then worked through systematically, coding the field notes, workshop data, documents and interviews. Analytic memos (see Appendix 1) were compiled to summarise the files, document new insights, trends and links which I noticed in each file or across a number of files. In doing this I was trying to keep a manageable record of the research events and data. I found the compilation of analytic memos useful for containing my systematic and critical thinking about the evidence, and for recording new ways of conceptualising the situation under investigation and statements about problems and issues which were emerging from the research context (Elliott 1991a:10). I tried, wherever possible, to share and discuss critically the analytic memos or summaries of the data with the participants at the follow-up workshops. This data was also shared 'across workshops' with different groups of teachers to try and validate the data and the emerging interpretations. This process was more practicable during the second phase of the research process which involved longer, more sustained contact with teachers. Enabling the participants to comment on the emerging patterns and trends was helpful, as it reassured me and helped to highlight misinterpretations. This process of 'recycling' the data with the participants provided further insights into the data analysis and helped to enhance the interpretations derived

from the sources of data. However, as most qualitative researchers will recognise, this is not a simplistic process as I was faced with my own ideological position and needed to view my interpretations of the data critically. At times I felt as if I was over simplifying the data and I was being too general in the categories, at other times I thought I was 'overdoing' the analysis and was always unsure of how to deal with my own bias in the interpretation process. I often felt frustrated and daunted by my lack of experience in qualitative methods, not knowing if what I was doing was 'right', a factor which was made more daunting by a feeling of being 'out there on my own' with little outside support for the process I was going through. I tried to keep a record of the struggle I went through working with the data. I found that coming back to it after a time away helped me get a clearer view of what I was doing, as did re-reading my interpretations, field notes, and case reports. A journal entry sheds light on some of the struggles which I faced:

> I have read this journal for the third time now, and it seems that the one issue which keeps coming through in my writing is my concern with the little time spent with teachers. The issue of time seems to be pertinent to them too, as it seems to appear often in my field notes (informal discussions), perhaps it is really a legitimate issue, or maybe it is symptomatic of some wider concern or problem. Why is it that teachers seem to be willing to come to workshops, but always use time as an excuse when discussions are held about long term involvements? I will work through my pack of data again to see if I cannot gain some further insights and discuss it over tea again. Sometimes I wish I had chosen an empirical study, I am sure punching numbers or measuring things must be easier than trying to sort these odd bits and pieces of information and insights into a coherent whole! Maybe I am doing this all wrong! Well, I am in it now and have to keep on swimming - maybe I will get to shore eventually! ( journal entry, 30-06-92).

Through the compilation of analytic memos and through close examination of the data on a number of occasions, I began formulating categories in which I could place the ideas, events and quotations which would substantiate these categories. Using the constant comparative method, described by Glaser and Strauss (1967:105), as a guide, I then reflected on and compared these categories for some time, and identified what I at the time referred to as trends and issues (see table 3.2 and table 3.4) which I reported in a 1992 mid-year project report (DF24). These categories I later clustered together to identify themes (AM13; CR3.10) which I reflect upon in Chapter 4. Kingby *et al.* (1990:125) note that themes can be used in a number of ways, depending on the focus and nature of the study. They can be used as headings for reports, or as a basis for further questioning and development within the study. These themes were to become

central to the planning of the project activities for phase two of the project (see figure 3.4). They became the subject/s of an active process of critical reflection on, and an action-based response to, the emerging issues within the identified themes (see Chapter 5).

### 3.3.5.2 Organising the data

The text generated through the use of these data sources and techniques was archived in additional data files (see Appendix 1) and a selection thereof is included in a case record which comprises volume two of this thesis. Stenhouse (1978) refers to levels of data organisation, and describes the case data as all the materials assembled by the field worker during the study. It represents the primary source of data. These are likely to be too bulky to be analysed repeatedly. For the purpose of this study the case data was filed in data files (DF1-160; see Appendix 1). References in the text to data files (DF) indicates sources which were too bulky to include in the case record. Stenhouse (1978:25) describes the case record as a "... theoretically parsimonious condensation of the case data, produced by selective editing without explicit comment". This case record represents "... a lightly edited, ordered, indexed and public version of the case data" (Rudduck 1985:102). The case record of this study includes selections, extracts and samples of primary data sources (see Appendices 2 and 3). These include sample interview transcripts, journal entry extracts, analytic memos, workshop programmes and other sources used to illustrate aspects of the report. The research report is therefore a critical and reflexive presentation and interpretation of the case, which rests upon, cites and quotes the case record (CR; see Appendix 3) for its justification. Fien (1992:8) provides a description of the benefits of using a case record, but, for the purposes of this study, the main benefit was to provide an ordered and manageable data set which could support the main text of the report and provide the report with validity and further possibilities for critical review by others.

### 3.3.5.3 Triangulation of data sources

Triangulation is not so much a technique for monitoring, as it is a general method for bringing different kinds of evidence into relationship with each other so that they can be compared or contrasted. In comparing accounts or data sources, the points where they *differ*, *agree* and

*disagree* should be noted (Elliott 1991a:83). In case of disagreements these can be checked against further sources of data. Fien (1992:13) sees triangulation as essential to ensuring trustworthiness of data and interpretations. It provides a form of self-monitoring for researchers through a process of observing the objects of the research from different perspectives, using different sources of data, methods and theories. Triangulation is also seen as a strategy to enhance the validity of research findings (Muralidhar 1993:445). Fielding and Fielding (1986:34, cited in Muralidhar 1993:447) note that

> ... at the very least one should try systematically to ... incorporate at least one method of data collection that describes and interprets the context in which the interaction occurs, and one that is designed to illuminate the process of the interaction itself.

In this study two types of triangulation were used: triangulation of data, and triangulation of methods. I compared, for example, the data from interviews with the data collected from the workshop sessions with my own interpretation of the events (in my journal). I also compared the way in which different methods of data collection provided different types of data, and took this into consideration (for example, workshop data would not be as detailed as interview data). Through comparing the content of different data sources in the context of the data collection methodology, I was able to form more reliable reflections on the emerging categories. However, as noted earlier, I tried, as often as possible, to involve teachers in the interpretation process. I often found 'triangulating' data across workshops where possible (for example, I would compare data from one workshop group with data from another workshop group in a workshop situation) a useful way of eliciting responses to the data from teachers, a process which helped me identify the emerging categories and themes. Triangulation involves both data collection and analysis (Elliott 1991b:133), and in the triangulation of different sources of data, and the different methods of collecting data, a process of progressive focusing took place. As the research progressed, and I became more familiar with the emerging themes, and as more analytic memos were compiled (as summaries or comparisons of data sources), I was able to use these secondary forms of data (already analysed) in further comparisons and analyses. A process of progressive focusing (Vulliamy *et al.* 1990:86) thus occurred in the data analysis of the We Care Primary project, and was enhanced by regular literature reviews to extend my understanding of the emergent themes.

### 3.3.5.4 Rigour and validity in action research

Winter (1989, cited in Stevenson 1995:200) argues that action research has "... a different conception of 'rigour' than that which characterises positivist research". The coherence of the justifications of proposed actions and the coherence of the interpretations of the consequences and circumstances of the actions are what constitute rigour in action research (Carr and Kemmis 1986). To ensure rigour in this research account I was to:

- Give a reasoned justification of my educational intentions (see Chapters 1 and 2);
- Where possible, make use of internal dialogue and/or a 'critical friend' or friends to help me to test and reflect on my intentions (including the underlying beliefs and values), and my interpretations of actions and the consequences and circumstances of those actions (AM7, AM15, AM53, AM54, AM55, AM78);
- Make use of Winter's (1987, 1989) principle of reflexive critique which has the intent of 'opening up arguments' by showing that other possible interpretations need to be examined critically in order to modify the original claims (Stevenson 1995:200; see Chapter 6);
- Make use of Winter's (1987, 1989) principle of dialectical critique which provides for a principled method of data analysis by subjecting observed phenomena to a critique (Stevenson 1995:201; see Chapters 4 and 6);
- Write the text in a way which would adequately represent the 'conditions for its possibility' (Winter 1987; see Chapter 6);
- Write the text in such a way that the symbolic description is true about the situation it describes. Elliott (1990:55) notes that *sincerity, honesty* and *self-awareness* are necessary conditions of valid symbolic description (see Chapter 1).

Winter (1987) sees validity in action research not as a matter of being 'correct' or a correspondence between two simple entities, but of adequately representing the 'conditions for its possibility', which, he argues, are found in the principles of reflexivity and dialectics. He extends the argument by stating that these principles can guide the internal, textual structuring of action research accounts, as well as - at the same time and without incoherence - the other

moments of action research processes. The action research text should therefore be written by a 'critic' who writes a commentary accompanying the structure of a work to make explicit the implicit patterns within the work. This will enable the researcher to show ramifications and analyse the detail in terms of the whole, and in so doing, represent in some form the complexity of the whole. The validity of the description therefore resides in the recognition that "... no matter how densely or tightly woven, it [the text] can never claim a literal or final correspondence with its object" (Winter 1987:144).

In action research, the situation being studied is ever-changing, neither fixed nor stable. Validity is thus not derived from self-dissociating objectivism or attempts to arrive at a fixed and definitive account of the situation (Elliott 1991a:129). In action research, the situation is a "... continuously changing object of inquiry ... The validity of one's understanding as an active agent resides in its fruitfulness at opening up new possibilities for future action in the situation" (*ibid*; see Chapters 5 and 6). Lather (1986b:78) provides further guidance for validity measures in critical research, and this, together with Elliott (1991b:129) and Winter's (1987:144) guidance on validity, was used to establish the credibility of the research account. She argues for a minimum of the following validity measures for post-positivist research designs:

- *Triangulation* of methods, data sources and theories (AM11, AM12, AM13, AM15, AM18, AM20, AM21, AM27, AM29, AM30; see Appendix 1);
- *Reflexive subjectivity* which implies evidence or some documentation on how the researcher's assumptions have been affected by the logic of the data (see Chapters 4, 5 and 6; DF22, DF40, DF103, DF104);
- *Face validity* which is established by recycling and reviewing categories, emerging analysis and conclusions with, at least, a sub-sample of respondents (see 5.5; DF17, DF60, DF65-75); and
- *Catalytic validity* which implies some evidence or some documentation that the research process has led to insight and, ideally, activism on the part of the respondents (see 5.5 and 5.6; DF78, DF60, DF90, DF106, DF129, DF155).

### 3.3.5.5 Ethical issues in the research process

A view of the world as a complex interaction of reflexive subjects, rather than objects or 'others' on which scientists do research, needs to be placed at the centre of our efforts to conduct research in schools and with teachers (Goodman 1992:121). However, group life cannot be fully understood by focusing only on the awareness of the actors, but must be understood in terms of its embeddedness within a social, political and historical context. These realisations about social and group life have implications for the relationship between the researcher and the research participants. Hall (1985:03) argues that "... there is no social practice (including research) outside of ideology ...", and, as researchers, we need to take account of the way in which our work supports particular social and political interests at the expense of others. We need to be explicit about the way in which forms of domination and power are maintained and renewed in a society.

Doing research in pre-election South Africa, in a society and school system entrenched with the injustices of apartheid ideologies, and the related forms of domination and power which are present in our society, posed a unique ethical challenge to me in this study. My position as a white academic working from an environment which represented an historically advantaged academic community, representative of the power base of apartheid society (with some of the related stigma of power and oppression), provided an ethical challenge to me in my role as academic researcher arguing for democracy and transformation. The contextual realities of this position provided significant ethical challenges in the research process, as I worked against perceptions of my role as part of white domination. As a result, I found myself fighting to expose, and reflexively respond to, both implicit and explicit relations of domination and power in the research context with rigour, transparency, reflexivity and commitment to the goals of transformation. Goodman (1992:124) argues, in support, that research should be conducted through a reflexive process which "... erodes the authority of academic discourse in order to challenge concepts of power, legitimacy and domination". Lather (1986a:263) argues for reciprocity in praxis-oriented research which implies a mutual give-and-take, a mutual negotiation of meaning and power. Relationships of trust and mutual understanding built on the principles of respect for persons, honesty and justice, need to be nurtured and sustained if the

research is to be meaningful and socially transformative (Fien 1992; Elliott 1991a; McNaught and Raubenheimer 1991). A number of ethical issues were negotiated on an ongoing basis during this research. Permission to collect workshop data, my relationship with the participating teachers, my goals and commitment to educational transformation, my interpretations of data, participation in workshop situations and transparency relating to the financial implications of developing materials for wider distribution were all aspects which had ethical implications for the conduct of the research process, all of which had to be negotiated or made explicit. Punch (1986:15) comments on the need for integrity in participatory research, and details how integrity affects the collection and interpretation of data. He sees transparency of data collection and data analysis central to integrity in research.

#### 3.3.5.6 My role as participant in the research process

As participant in this process, I was challenged to find ways of involving myself as a full participant or co-learner who could provide support for the practical and emancipatory empowerment of teachers in materials development processes and in their own learning. This was not to be the role of an outside expert, distant from the 'subjects' or teachers, but rather a "... supportive co-researcher assisting teachers as they jointly grapple with the problems inherent in the educational crisis" (McNaught and Raubenheimer 1991:4) through the development of materials which could contribute to change in their classrooms. I needed to, wherever possible, find ways of involving teachers in the organisation of their own empowerment and enlightenment to the social and political realities of their teaching and learning situations, by using the We Care Primary pilot materials as capital and a focus for these social and dialogical encounters.

Establishing my role as participant would prove to be a particular challenge for this research process (see 4.3.5). McNaught and Raubenheimer (1991:4) and Elliott (1991a:134) note the need for building trust relationships as an essential element of action research. In the light of the conditions under which many teachers in South Africa work, as well as the socio-political history of the education crisis, a history of a lack of involvement in environmental issues, research and materials development activities, the building of trust relationships was to become a central

aspect of this research project. Elliott (1991a:134) argues that in circumstances where relationships of trust are not present, the quality and authenticity of the data may suffer. He recommends that attention be given to *establishing the conditions* (my emphasis) which create trust between those in insider roles and other participants within the situation (an argument which I support and extend in Chapter 5). The establishment of relationships of trust were to influence the research process considerably, and proved central to such aspects such as gaining access to teachers and ongoing authentic participant involvement (see Chapters 3 and 5).

A further challenge to my role as participant in the research was related to processes of interaction with participants. Both Lather (1986b:65) and Fien (1992:7) note the role of the researcher as being important in the process of generating text for interpretation and regard it as being important that researchers adopt a reflexive approach to the effects of their actions on the experiences of the other participants. The researcher's personal practical knowledge interacts with the personal practical knowledge of the teachers in community, resulting in an interactive research process, which is a "... particular form of social action that creates dialectical confrontations and produces intersubjective meanings ..." (Dwyer 1979:211, cited in Fien 1992:7). The role of the researcher is thus that of "... a co-equal co-respondent participant in the research, responsible for action as much as any other participant in the research" (Bartlett 1988:24, cited in Fien 1992:7), creating particular challenges for researchers to be self-reflexive about positions of power and equality in research.

### 3.3.6 Concluding comment: highlighting complexity in participatory research

Through a description of the research orientation, design and methods in the context of the project, a full history and account of the research process is provided. This is a preparation necessary for it to become interwoven with a description of the trialing of the We Care Primary pilot materials and the ongoing research activities. Describing the research process is, according to Punch (1986:15), an essential element in reporting a project because of the light it can shed on the data. In the next section the links between research design, research strategy, research techniques as well as the relationship between aspects of research design, data collection and data analysis will become visible through a description of the research process. Through this

description the complex nature of the research process is revealed. This is described by Bechhofer (1974:73, cited in Bryman and Burgess 1994:2) as "... not [being] a clear cut sequence of procedures following a neat pattern, but a messy interaction between the conceptual [social] and empirical world ..." and by Goodman (1992:118) as 'dizzying'. Goodman (*ibid*) aptly describes the realities and complexities of doing participatory research in a post-positivist era by noting:

> Scholars not only are faced with questions about how to generate projects worthy of social inquiry, how to enter particular educational settings, and how to find informants in these settings, but must also question the rationality of developing presuppositions about social reality, the ethics of their work, power relationships between themselves and those whom they observe [and work with], and the reporting of their experience.

The next section details how I attempted to face some of these interrelated challenges within the constraints of the particular socio-historical context of junior primary education in South Africa, and within the constraints and possibilities of starting a participatory materials development process with the We Care Primary pilot materials.

## 3.4. THE FIRST CYCLE OF INQUIRY: TRIALING THE WE CARE PRIMARY PILOT MATERIALS

### 3.4.1 The planning phase: gaining access and negotiating workshops

Following the workshop held at Umgeni Valley in December 1991, I was to plan a process of trialing and testing 300 We Care Primary pilot booklets in the Western Cape as the focus of a research project (CR2.11). As a researcher unfamiliar with the Western Cape teaching environment[14], but linked through the University of Stellenbosch and the Share-Net network to the local environmental education and educational community, I aimed to plan a process of action which would:

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[14] In 1991 I moved to the Western Cape to continue my studies. I had previously been teaching in the Eastern Cape, and had little or no contact with teachers or educational structures in the Western Cape at the start of this research project.

- Expose practising teachers to the We Care Primary pilot materials and facilitate the development of environmental education in the junior primary school phase through sustained participant engagement in the further development of these materials;
- Enable teachers to participate in the development process of the We Care Primary pilot materials through a trialing process which would invite further suggestions, adaptations, evaluation, implementation possibilities and ideas for the redevelopment of the materials;
- Initiate the redevelopment of the We Care Primary pilot materials for wider distribution, and establish a process of ongoing materials development through critique-in-action of the We Care Primary materials generated through this process; and
- Initiate a process of change and growth to facilitate the transformation of curricula in the junior primary school phase (DF8, DF24).

Following the recommendations of the Umgeni Valley workshop (see 3.2.1), and after discussions with my supervisor, I set about planning a series of teacher workshops. Initially, I made contact and had a number of meetings with Western Cape environmental education organisations, college lecturers and the local Teachers' Centre staff who helped me compile and send out invitations to teachers to participate in the We Care Primary materials development project (CR3.11). I planned to run two workshops at each venue, the first workshop being planned as an introductory workshop in which the project, the We Care Primary pilot materials and the process of trialing were to be discussed and workshopped with teachers (CR3.12). The second workshop was intended to be a follow-up workshop, planned a month later than the first, to give the participating teachers time to work with the materials in their classrooms (DF12). Prior to the workshops I discussed the workshop planning with the people who had agreed to help organise and facilitate the workshops. In some cases, the workshop organisers joined me as co-presenters of the We Care Primary materials development workshops which added different dimensions and perspectives to these workshops (examples of these workshops are the Wildlife Society workshop and the Parow Teacher's Centre workshop). Gaining access to teachers proved to be relatively easy, helped along by my participation in the EEASA Western Cape environmental education exposition, in which I participated with a display of the We Care Primary pilot materials (see figure 3.5).

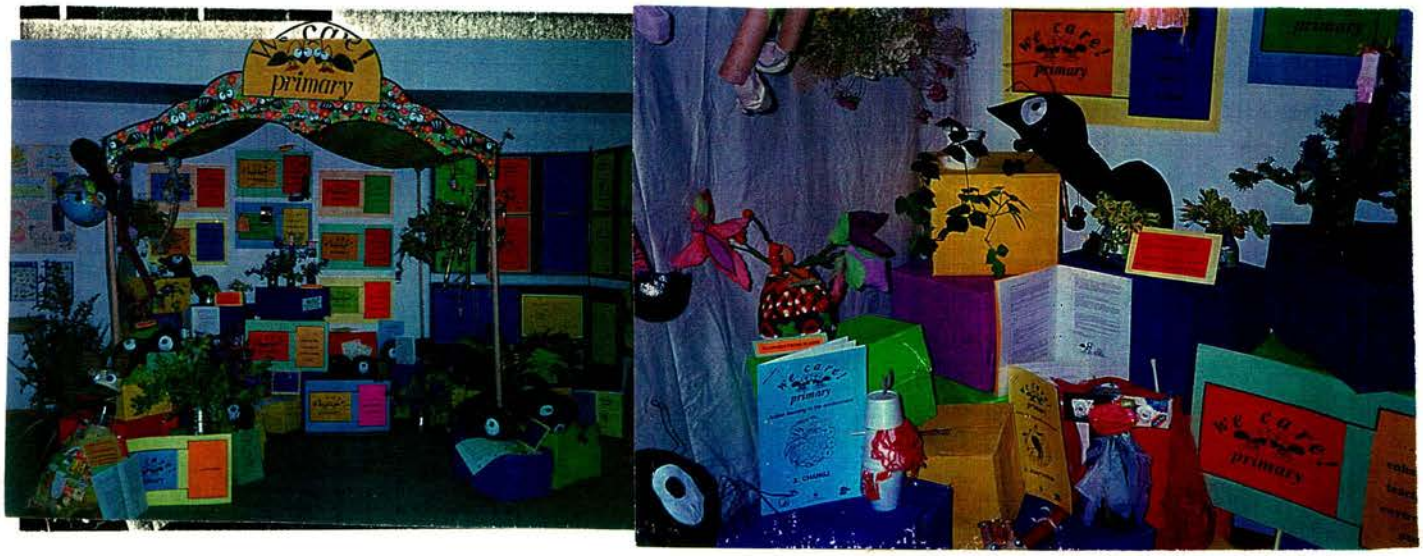


*Figure 3.5* *We Care Primary display at the EEASA environmental education exposition (Hewat College of Education, March 1992)*

A workshop was planned at Hewat College of Education to coincide with the exposition to enable teachers to encounter additional environmental education resources available in the Western Cape. The significance of my participation in the Hewat exposition became apparent through the contact with other organisations who were interested in the project, and it was at this exposition that the process of arranging workshops and workshop venues changed from my having to make contact and request people to assist me in organising the workshops, to a situation where I was being approached by organisations to run workshops through their structures (the Fairest Cape workshop, and University of the Western Cape (UWC) workshop are examples of workshops which resulted from contact made through the exposition). Ongoing organising of workshops ran concurrently with the actual workshops (see CR3.13; DF21), providing a good illustration of how the phases of an action research cycle often overlap. At the time when I compiled my mid-year report (DF22, July 1992), I had run a total of 27 workshops (see table 3.1). The value of linking to a supportive network of environmental educators and educationists was thus established early on in the project. The way in which the organisations and people contacted to help with arranging workshops were enthused by the project, and were always willing to help with whatever arrangements needed to be made, was noteworthy.

*Table 3.1 Phase one We Care Primary materials development workshops*

| **Workshop 1 (Introductory)** | **No** | **Professional context** | **Workshop 2 (Follow-up)** | **No** | **Professional context** |
|---|---|---|---|---|---|
| Hewat College of Education | 32 | JP teachers<br>1 principal | Hewat College of Education | 17 | JP teachers |
| Cape Town Teachers Centre (A) | 37 | JP teachers | Cape Town Teachers Centre (A) | 15 | JP teachers |
| Cape Town Teachers Centre (B) | 27 | JP teachers<br>1 University | Cape Town Teachers Centre (B) | 10 | JP teachers |
| CED (Cape Education Department) environment study project | 8 | Key project teachers (JP)<br>Dept planner<br>Subj. Advisor | CED environment study project | 8 | Key project teachers (JP)<br>Dept planner<br>Subj. Advisor |
| Fairest Cape group | 16 | JP, SP, JS teachers | No follow-up | | |
| Wildlife Society | 11 | JP teachers<br>1 principal | Wildlife Society | 1 | JP teacher |
| Turfall Primary | 12 | JP teachers | Turfall Primary | 11 | JP teachers |
| Matroosfontein Primary | 25 | JP teachers | Matroosfontein Primary | 25 | JP teachers |
| Parow Teachers Centre | 14 | Pre-primary principals | Parow Teachers Centre | 16 | Pre-primary principals |
| Rhenish Primary (4 workshops) | 8 | JP teachers | Rhenish Primary | 8 | JP teachers |
| Stellenbosch Univ. | 18 | JP teachers | No follow-up | | |
| Environmental Education Resources Unit (UWC) | 35 | JP teachers | EERU (UWC) | 10 | JP teachers |
| Hewat Students | 22 | JP students | Hewat Students | 22 | JP students |

Preparation for the workshops involved planning a workshop structure, objectives for the workshop and the materials and other practical arrangements that needed to be made. After compiling the objectives of the workshops, it became apparent that two workshops would be the minimum contact required to establish a process which would be in any way participatory (CR3.12). The number of participants per workshop was an important consideration, and

workshops were planned to limit the numbers of participants to 30. To enhance the scope of the study, I attempted to arrange at least one series of workshops with a participating school which would enable a more sustained interaction with a group of teachers. A series of five workshops was arranged to take place with the Junior Primary department at S3, to create an opportunity to investigate the implications of longer, more intimate sessions which were school-based, and not centre-based. This was planned to provide a different source of project data, which could then be triangulated with the data gathered from the other two-session workshops.

As far as possible, I planned the workshop content in collaboration with others involved in the project, usually with those people who had agreed to support me in the process of running workshops. Whilst the S3 programme was structured to include an introductory workshop, a development workshop, a stimulation (networking) workshop, a progress workshop and an evaluative workshop (CR3.14), the content of each workshop was negotiated with the teachers prior to the following workshop. A selection of short 'stories'[15] which detail some of my planning experiences reveal the collaborative process which developed in the planning phase of this cycle of inquiry:

> I contacted C1 through C2 who is a lecturer at the college. I found the group of junior primary college lecturers to be very enthusiastic about the workshops and very willing to arrange a workshop for teachers in the area near the college. We talked about the workshop and the workshop content and they suggested that I try to link the materials to the syllabus which I thought was a good suggestion. I must get hold of a syllabus as soon as possible! We talked about the practical arrangements too, and discussed how we would prepare for the session. I was pleased to talk with them about the workshop and how it should be run (journal entry, 29-01-1992).
>
> Initially when I went to see C6 I was horribly confused. I have been thinking of how to approach my workshop now for quite a few weeks, but the more I have been reading and listening to others the more confused I am getting. I am especially confused about how to approach the relationship between environment studies and environmental education, as I know all junior primary teachers are working with an environment studies syllabus ... the discussion cleared up some of the major questions I had and afterwards I felt more confident and able to straighten my thoughts out for the first workshop. I decided to write

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[15] I use the term 'stories' to indicate incidents or representations of my 'lived experience' of the research process. The use of short 'stories' or descriptions of experiences are used in this thesis as a narrative writing strategy and are chosen to be representative of the wealth of data collected during this study.

> them all down to make sure I was clear about the main thrust of how to approach the issues (journal entry, 02-03-1992).

These short 'stories' demonstrate the 'progressive focusing'[16] and continued inquiry which was taking place as a result of contact with different people around the planning of the We Care Primary materials development trialing workshops. To document this process, I kept regular field notes which I translated into journal entries on a daily basis. Often it was not easy to make the field notes while having a discussion, but I tried to write things down soon after, if I was not able to make the notes then and there. The next 'story' documents how my ongoing interaction with different people during the planning phase (CR3.15) not only influenced the workshop structure, but also the participants and content of the workshops. In addition, these meetings and discussions provided me with exposure to new sources of documented information which I used reflectively in the context of the project. The Scottish Environmental Studies 5-14 document (SCCC 1982) referred to in this planning 'story', was to provide further insight into the nature of the materials, their relation to the existing South African syllabi, and later (see 5.6.1) to influence the development of the Western Cape interim syllabus for environmental studies in the junior primary school phase (DF 141):

> I went to see C7 to discuss the possibility of running a workshop with the Cape Education Department (CED) environment studies project. He seemed to be excited about the We Care Primary project as the approach of the materials ... tie in well with this project. He suggested that I work with a core group of teachers, as they were highly experienced in new teaching and learning methodologies, and would be able to provide me with valuable feedback relating to the redevelopment of the package. He agreed to arrange a workshop for me with these teachers and said he would give me a copy of the Scottish environment studies syllabus document, as he thought it would be valuable for the project. It seems I may have found some of that background information that I have been looking for at last! We also talked about some of the curriculum and policy changes that are being debated at the moment and he gave me a copy of the ERS[17] documents

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[16] Vulliamy *et al.* (1990:86) describes a process of 'progressive focusing' whereby the stages in the research become more sharply focused through ongoing interaction, reading and critical reflection.

[17] The Education Renewal Strategy (DNE 1992) is an extensive policy proposal for educational reconstruction in South Africa. It was developed by the Department of National Education, whilst the apartheid government was still in power. While I was at the same meeting, I realised that the NEPI (National Education Policy Initiative) reports (1992) were being prepared for publication. These represented an analysis of policy options for an equitable education system in a democratic South Africa and were a project of the NECC (National Education Coordinating Committee),

> which I will now endeavour to work through (journal entry, 03-03-1992).

The ongoing collaborative planning in diverse settings, enabled me to feel more confident about the process I was following. I found the people whom I contacted to be helpful, and it was always useful to discuss the workshop plans with them, and to learn from their insights and particular experience. A pragmatic reality which arose from the planning phase, and resulted from my initial decision to work through networks and teachers' centres to make contact with teachers, was that I was unable to make direct contact with the teachers prior to the workshops, and thus I was not able to involve them in the planning of these workshops. However, during the workshop process I was approached by two schools (S1 and S2) to run workshops based at their schools. These requests came from teachers who had attended the other workshops at Hewat College and the Cape Town Teachers' Centre. In response to their requests I arranged a planning meeting at their schools prior to the workshops to negotiate the workshop programme and content with some of the teachers who would be attending. This represented a small shift in the project towards greater participation by the teachers during the planning phase.

Through an open discussion during the first workshop on the feedback procedures which were planned for workshop two, I was able to involve the teachers in a limited way in planning the second workshops (DF16). I also tried, as the following journal entry or 'story' shows, to follow a similar process of collaborative planning and progressive focusing for the planning of the second workshop:

> C8, like the teachers at the WLS workshop, seemed to be happy with the way I was planning to approach workshop two. He did, however, warn me against using the information in a quantitative way. This is not what I was intending, I am looking towards identifying trends across workshops, but at this stage, I feel that I may be directing the questions too severely and therefore I may be limiting the feedback. After this discussion I decided to change the 'questions for discussion' by reducing them, making them broader and changing them to 'questions as stimulant for open discussion' in the next feedback workshop. I need to think about this incident some more and be more careful about my planning of workshops in future (journal entry, 25-04-1992)!

This planning story reveals some of the tensions involved in the planning process, and the need

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representing civil society and the Mass Democratic Movement.

for ideology critique, critical reflection and reflexivity in the planning phase of an action research process. Had I in this situation not been reflexive about my role in structuring the research process, and had I just accepted the preliminary planning as viable due to the fact that I had received affirmation on these plans from a group of teachers, I may have continued with a process of subtle domination and manipulation, asking questions which, by their over-structured nature, were manipulating and directing the feedback from the groups of teachers attending the workshop.

The planning phase of this cycle of inquiry emerged as an interaction of discussions with people on the process of planning the workshops, and the nature and content of the workshops. These discussions were being combined with reflection on workshops already held, and with critical reflection on my own role in the process. These diverse experiences were held together by regular reporting of daily events, and a process of progressive focusing and triangulation of the data being collected. Ongoing discussions with other participants in the process proved to be useful in clarifying incidents or ideas as they emerged from workshops and in turn, these reflections were used to inform further workshops.

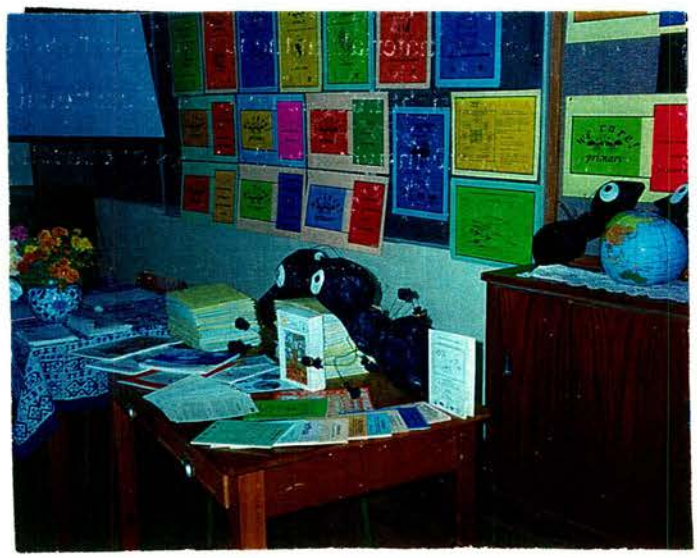

*Figure 3.6* *Additional resource material collected to support the We Care Primary pilot materials, used in 'setting up' a typical We Care Primary pilot workshop (Cape Town Teacher's Centre, 12-03-1992)*

Further planning issues of a more practical nature required that I make a selection of relevant resource materials from other organisations and publishing houses which would complement, or extend, the We Care Primary pilot materials. I endeavoured to collect a full set of the materials that were cross-referenced in the We Care Primary pilot booklets (CR3.16) as examples which teachers could use as part of the workshop procedures (see figure 3.6). This proved to be a useful exercise as it gave me further insight into the variety and nature of resource materials being developed in South African environmental education at the time.

### 3.4.2 The action phase: involving teachers in the introductory workshops

Involving teachers in a process of participation in their own learning, and in a process of participatory materials development during my very first meeting with them, proved to be a challenge which made it necessary for the session to be carefully planned. The many hours and meetings that went into the planning process described above helped me plan the workshops to enable teacher participation. Out of the prior discussions and a reflection on the evaluation of the WCEY materials, I identified three key themes or focus areas. These were translated into questions which were used as the focus for discussion sessions. The themes were:

- The current status of resource materials in the junior primary school phase. Through this theme I was hoping to gain insight into the need for educational materials, the teachers' access to materials, and some insight into the types of educational materials preferred by teachers.
- Environmental education in junior primary classrooms. Through this theme I was hoping to gain insight into the role, status and function of environmental education in junior primary classrooms. This theme would encompass developing insights into the local environmental issues, and the teaching and learning methods and approaches involved in the teaching of environment studies.
- The We Care Primary pilot materials. Through this theme I was hoping to gain insight as to how teachers could possibly use the materials in their classrooms, and how the activities could be adapted for use across in the junior primary school phase. I also hoped to gain insights into the preferred structure and format of the materials.

*Table 3.2 Key questions for the group sessions during the introductory workshops*

| | |
|---|---|
| 1. | Discuss your needs regarding resource materials for the teaching of environmental education in the junior primary school phase with some consideration of what you consider a good resource to be. |
| 2. | Identify issues or problems from your local environment. Investigate the possibility of incorporating an issue into an environmental studies theme or topic (reflect on your current syllabus). You may wish to use the seven concepts used in the We Care Primary materials to help you plan. |
| 3. | Use the We Care Primary materials to find activities which may help you teach the above topic or theme. Do the activities address the topic in a meaningful way? If not, how could you adapt the activities? Can you suggest any alternative activities? |

These themes were planned to encourage discussion and reflection on the nature of the social and historical context of schooling and the related resourcing of school programmes. The questions were to provide valuable data on these issues (DF14) and provided many opportunities for critical reflection on the nature of curricula, and on the reasons why there appeared to be such a shortage of appropriate resource materials for junior primary environmental education (see Chapter 4).

The contributions made by teachers were recorded through the compilation of field notes during and after the workshops, and were based on observation, listening and participation in the group discussions. I also, with the consensus of the teachers, collected samples of their work, which I was to analyse and interpret, with the intention of providing them with a summary of the workshop events at the next workshop session.

#### 3.4.2.1 Workshop outcomes: some common trends

Through regular summaries and analysis of the workshop outcomes, through a comparison with the workshop data from the other introductory workshops and through triangulation with my

journal I was able to identify some trends emerging across the different workshops. A reflective discussion on these trends appears in Chapter 4, but, for the purpose of reporting the introductory workshop, I offer a summary of these trends in table 3.3.

*Table 3.3 A summary of the trends identified from the introductory workshops*

| **Trends and issues** | **no. of workshops** (total workshops held = 13) |
|---|---|
| An expressed need for resource materials for environmental studies | all |
| Lack of resources relevant to age of junior primary children | all |
| Problems with access to and getting hold of resource materials | 9 |
| The need for appropriate materials for theme work | all |
| The conceptual approach to planning theme work was appealing as an alternative planning strategy | 8 |
| Teachers' concern about local environmental issues and conditions | all |
| Many local environmental issues were not included in the We Care Primary materials | all |
| Teachers were excited about the We Care Primary pilot materials and liked the provision of many new ideas | 8 |
| Groups were able to find some activity/ activities to use with their theme or topic | 12 |
| Teachers expressed a lack of time to develop localised resources | 9 |
| Discussions on ways to share resource materials | 7 |
| Discussions on the possibility of compiling resource catalogues or resource lists for junior primary schools | 6 |
| Discussions on the implications of 'hands-on' or active learning | 8 |
| Discussions on the constraints and nature of the school context | 12 |
| Concern about how the materials linked to the syllabus | 10 |
| A lack of resource materials available in Afrikaans | 5 |
| Teachers commented on the value of interaction during the workshop | 9 |
| Concern about curriculum links between pre-primary and senior primary | 7 |

These trends and issues were triangulated with data gathered from the focus group interviews and field notes of the second series of workshops, and were used to identify themes emerging from the trialing of the We Care Primary materials. These are reflectively reported in Chapter 4.

#### 3.4.2.2 Relationships and participation: conditions for critical reflection

During the 13 introductory workshops (see table 3.1) I made contact with 265 teachers (DF19). It was impossible for me to 'get to know' these teachers individually, and I therefore formed a collective impression of the different groups of teachers with whom I worked. The issue of building relationships of trust became a challenge in these circumstances, but through moving around in the workshop sessions, and joining in with different group discussions, I tried to take the role of full participant. Although I was learning a great deal from the teachers, I was not able to participate fully and engage with the ideals of emancipatory action research and critical theory due to the limited time I had available to spend with the different groups.

However, the coming together of groups of teachers from a variety of schools was seen by the teachers as a valuable experience, reflected in comments such as "... I thoroughly enjoyed this project because I had a chance to meet and discuss common problems with teachers from different schools ..." (W1); "... by discussing ideas with different teachers and giving input it helps to extend [and] enrich our own teaching ..." (W8). The divisions between the education departments, and the realities of separation caused by the separate schooling policies of the apartheid regime, are reflected in the following comment "... more discussion groups with teachers from different areas will be welcome so that we can discuss what they have been doing in environmental studies ... " (W12). Although it was difficult for me to form close relationships of trust in the context of large workshop groups, there appeared to be some value in creating a forum where teachers could meet and share ideas and experience of their teaching and talk around common issues. These sessions seemed an ideal forum for reflective discussion.

However, for teachers to be engaged in emancipatory action research around the use and development of the materials, and for this process to become transformatory (as was the

intention at the start of the study), would mean *that, in addition to being engaged in critical and reflective discussion, teachers would need to be engaged in a process of acting as teacher-researchers* which Walker (1989:6) sees as "... [engaging] teachers in developing an empowering and democratic discourse which redefines teaching as intellectual work". Crucial in the process of change is the need for teachers to see themselves as "... reflective practitioners rather than only technicians" (Walker 1989:7). One contact session with teachers cannot therefore be seen to encompass the rigours of an action research process in which teachers are required to reflect on their practice. Although some comments on the process reflected an empowering role for participating teachers (for example: "... by participating we help to make the materials more relevant to ourselves and to other teachers who will use the materials ..." (W3)), the teachers would need to engage more critically with the materials through ongoing reflection-in-action on the use, implementation and further development of the materials.

The end of the introductory workshop thus constituted a discussion on how teachers could work with the materials in their classrooms, possible ways in which they could monitor the use of the materials through reflection-in-action, and different options for providing critical comments on the use of materials for the follow-up workshop. Being relatively theoretically naive and uninformed during this phase of the project, I did not have enough insight into the rigours of classroom-based action research to adequately facilitate such a process, and, whilst elements of a process of reflection-in-action were being advocated, the complexities and extent of interaction and involvement required for such a process to become meaningful in the context of educational change were not realised (see 5.7 and 6.4).

I found it more possible to sustain ongoing and authentic participation in trialing the materials in the smaller group sessions with the CED environment studies group and with the S3 group. These groups allowed for a situation in which we could work together and reflect critically on the use and further development of the We Care Primary pilot materials and the workshops we were engaged in. The processes of discussion and critical reflection around the materials were easier to monitor through field notes, and, through critical reflection within the ongoing discussions during the workshops (AM11, DF20, DF22), I was able to gain an insight into how the activities were working, and gain further insight into the contextual realities of junior

primary teachers. I also found it easier to build relationships of trust with the smaller groups. Due to the limited number of people involved in these sessions, it was easier to be more intimate in the working situation, and I was able to get to know each teacher personally and develop closer relationships. An extract from my July 1992 mid-year report (DF24), in which I reported, analysed and described each workshop, bears witness to the growth of trust relationships:

> A feature of these workshops has been the growing relationship between us and the increased sharing of ideas and enthusiasm for environmental education and the use of the We Care Primary pilot materials as contact sessions have been growing steadily ... I was sorry that the workshops at S3 had come to an end. The relationship that we have built over the last three months had progressed considerably, and with it an increased interaction and exchanging of ideas (project report, July 1992).

This was confirmed through the teachers' feedback during the final session when they were asked to comment on the process of our interaction and the ongoing visits:

> These workshops have been of more value to us than other meetings or lectures because we have been able to work in a small group and it has been of relevance to *our* needs. We would like this process of ongoing support to continue, perhaps a visit twice a term from you would be possible ... (pers. comm. S3, 25-05-1992).

Some participating teachers (in the introductory workshops) requested that I run workshops at their schools with the whole junior primary department. Responding to these requests created opportunities to begin building relationships of trust with particular schools and groups of teachers within the context of their school (AM15). I found that working at schools, with groups of teachers who already knew each other, and who had already formed working relationships from within their everyday contexts, was more conducive to collecting authentic data. The teachers felt more comfortable discussing issues which were familiar to the group as a whole. It also made contacting the teachers for follow-up workshops easier, and facilitated consistent long term interaction with teachers. The establishment of these school-based workshops and the experience and contact with teachers in their school context was to become central to the process of developing reflection-in-action around the development of resource materials in phase two of this study (see 5.4 and 5.5).

The establishment of authentic teacher participation in the workshop sessions (see 5.4) and the

development of relationships of trust with teachers, had a significant influence on my particular role in the research process. For the purpose of reporting the workshop process, I will use two 'stories' which reflect the way in which I initially approached the workshops, and how ongoing critical reflection and experience of facilitating workshops, meeting with, and getting to know teachers led to changes in my approach to workshopping, which, in turn, enhanced the authenticity value of the data and the potential for ongoing interaction with teachers.

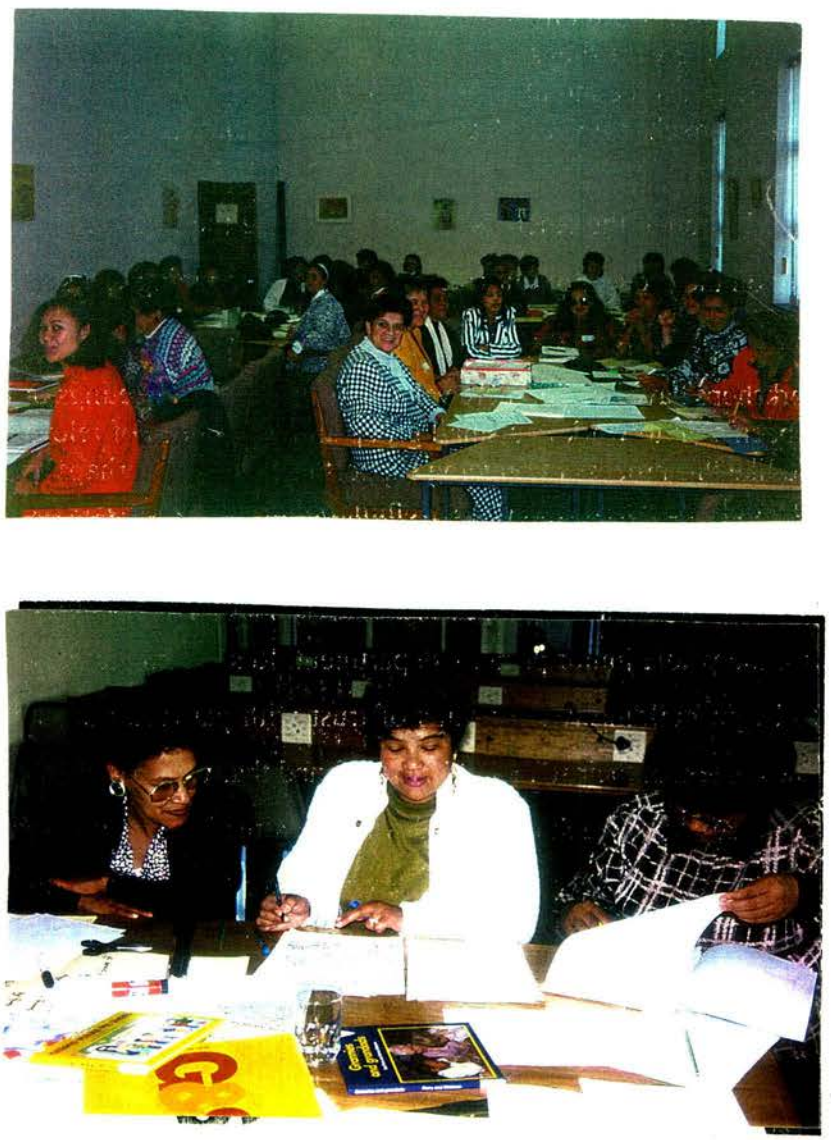

*Figure 3.7* *Teachers participating during the We Care Primary pilot materials development workshops*

*Table 3.4 Story one: Dilemmas of structure and control*

**Dilemmas of control**

My first workshop! I was very very nervous. I spent absolutely ages preparing for it and I organised everything very well. It looked nice with the posters and flowers I brought, and I was hoping that this would help to create a good atmosphere. Once I'd started the workshop it felt a lot better. I started the workshop with an introduction and after a round of introductions I organised all the teachers into discussion groups. We started by looking at the teachers' needs for resource materials. I took out my tape recorder and asked whether it would be in order if I taped their discussions. The looks which I got from the teachers were not very encouraging, but I tried it anyway. However, after carrying the recorder from one group to the next, a teacher asked me to turn it off so and I realised that I was more concerned with the tape recorder than the discussions, and I decided to abandon trying to use it. From the discussions it was apparent that there is an overwhelming need for relevant resource materials for theme work. It seems that the teachers have a need for materials which are appropriate for use in junior primary classrooms, and most available resources don't address the lifestyles and realities of South African children. While moving around the room, I tried to listen to the groups to follow their discussions, and all the while I attempted where necessary to draw people into the discussions. It didn't always feel comfortable approaching the groups, and often when I approached, I felt that they 'clammed up' or stopped what they were really talking about. This got easier as the workshop progressed, and towards the end I was participating freely in the discussions. I then asked the teachers to 'give feedback'. I wanted them to write their feedback on overhead transparencies to present to the rest of the group. However, I could see that this was inhibiting the teachers as they kept nominating each other to come forward, and no-one seemed to want to do it. I asked them to just report back from where they were seated instead, which worked better. I then introduced the We Care Primary pilot materials to the teachers by showing them how the concepts in the books could be used. Through discussion about the conditions in their local environment, they identified different environmental issues, and used the concept map to plan curriculum ideas around these issues. The next part of the workshop focused on related resource materials which can be used in conjunction with the We Care Primary pilot materials. The teachers then looked for ideas and activities in the We Care Primary pilot materials which they could try in their classrooms. They discussed how they would go about working with the materials. This led to a discussion on syllabi. We finally discussed how they could use the materials at school and we discussed different ways in which teachers could provide feedback for the next workshop. The planned workshop structure - as I had thought it out after all the discussions - had stayed basically sound, but details of the workshop procedure as I thought it would happen, did not stay the same. This gave me some idea of what 'worked' in the workshop, and how I could use this to plan for the next workshop. While the teachers seemed to enjoy the workshop, I cannot help feeling that I was rather structured in my presentation, but for a first try, I don't think it was too bad (adapted from journal entry and field notes, 05-03-1992).

This story clearly illustrates my reliance on structure and control at the time. If this factor were to be analysed simplistically, without consideration for the socio-political and historical context, it could be ascribed to both an inexperience in the techniques of workshopping, and fear and tension induced by travelling into unknown territory. However, upon closer analysis, it also illustrates implicit power relationships embedded within the structured nature of the workshop. The implications are that teachers become reduced to "... the status of specialised technicians ... whose function it becomes to manage and implement curricula programmes" (Giroux 1985:376). The instrumental manner in which this workshop was presented reflected a technocratic approach to teacher development which has been described by Zeichner (1986:4) as resting upon the "... foundations of a positivistic epistemology and behaviouristic psychology [which] emphasizes the development of specific and observable skills of teaching which are assumed to be related to pupil learning". McNaught and Raubenheimer (1991:46) describe this model of workshops as follows:

> [This] model involves an active facilitator with clear goals and objectives for learning. The facilitator has a certain body of knowledge to be passed on to others via a participative and experiential learning process. The facilitator guides the group process, with much active discussion and participation by the learners.

In this story, the teachers were merely the executants of *my* planning of *their* experience. Other aspects which are reflected by this discussion are the lack of relationships of trust, and how this had an effect on the way in which the data was being collected. This story represents an explicit example of the misappropriation of the notions of empowerment, enlightenment and participation. Whilst I, with all the good intentions in the world, was trying to create a situation in which teachers could become co-learners and participants in the process of developing materials, I was instead, albeit unwittingly, perpetuating the enactment of the dominant social paradigm characterised by mechanistic thinking, dualism and structural functionalism - the same 'grand narratives' which I critique as being partly instrumental in the development of both the environmental and educational crises (see Chapter 2).

Ellsworth (1989:304), especially interested in what she refers to as "... the violence of rationalism against its Others ...", argues that we need to focus on a "... sustained encounter with currently oppressive formations and power relations ...", an encounter which owns up to "... my

own implications in those formations [which are] capable of changing my own relation to and investments in those formations" (*ibid*:304).

*Table 3.5 Story two: Responding to teachers in context*

**Responding to teachers in context**

I was approached by C8 from S4 Primary to do workshops at her school to 'stimulate the other teachers to get involved in the project'. She had attended both the introductory workshop and the feedback workshop, and was actively using the We Care Primary pilot materials in her classroom. She, as Head of Department at her school, was using the materials to help plan new schemes of work for their junior primary department[18]. However, she wanted me to do workshops with the teachers at her school, and also to provide them with more books to work with. I only had 90 minutes to do this workshop, and after discussing it with C8 and another teacher from her school, I planned to approach the workshop as an informal discussion session in which we would focus on the syllabus topics which the teachers were busy working with. We started by reviewing the work the teachers had been doing at their school. I looked at their curriculum plans, and I asked them to point out areas which they wanted to discuss further. We talked about the topics they had chosen, and we spent some time talking about local environmental issues. We looked for links between these issues and their topics, and the nature and causes of these issues. We also talked about the current environment studies syllabus and its lack of relevance. After discussing the possibilities of coming up with their own ideas which would 'make the syllabus more relevant', and as they seemed to want to get to know the We Care Primary pilot booklets, I introduced them to the seven concepts of the We Care Primary pilot materials (see figure 4.2), and gave them time to work with the concepts and plan around the same syllabus topics. We talked about the way in which the use of the concepts could influence their planning, and they decided that they would try to incorporate the concepts when re-planning their schemes of work. We also spent time working through the booklets, finding activities and discussing the ways in which they could be used to enhance theme teaching. They planned a series of follow-up sessions where they were to work together (with the We Care Primary pilot materials as a resource) on the planning of their new work schemes. They asked whether I would be able to return at a later stage, and spend some time working with them on the refinement of their planning (adapted from field notes and journal entry, 13-05-1992).

Constant reflection on my role as workshop facilitator and researcher became a focus of the research (see 4.3.5) as I struggled to gain a better understanding of notions of facilitation, power, teaching and learning. This story (see table 3.5) reveals how this process of reflection

[18] At the time, many junior primary teachers at schools in the Western Cape were in the process of changing their curriculums to a 'thematic approach'. I was later, in phase two of this project, to link up with this curriculum initiative, and the We Care Primary materials were to become a vital support for the INSET programmes which were supporting this initiative (see 5.6).

contributed to my own growth as workshop facilitator.

The story of this workshop (table 3.5) reveals a more responsive process, planned to respond to participants' requests and particular context. Through the nature of the workshop teachers were encouraged and enabled to reflect critically on the purposes and consequences of their work in terms of the social realities of the children and changes they had embarked on in their teaching. The teachers in this workshop were viewed more as active agents in their own development and growth as professional practitioners. Zeichner (1983:6) sees the role of critical teacher education interventions (which would include a process like the We Care Primary materials development workshops) as developing teachers' "... capacities for reflective action, and to help them examine the moral, ethical and political issues, as well as the instrumental issues that are embedded in their everyday thinking and practice". He argues that the central question in teacher education interventions is in "... determining which educational goals, educational experiences, and institutional arrangements lead towards forms of life that are mediated by justice, equality and concrete happiness" (*ibid* 1986:6) and holds that programmes should be scrutinised for their contributions towards these ends. Workshops used as part of research and research-linked change initiatives should be scrutinised in the same manner. In this regard, Berlak and Berlak (1981:252) argue that teacher education programmes or interventions should provide the aspiring and experienced teacher with access to people who can help initiate and sustain a process of critical inquiry, a role which is reflected more by the second workshop story than the first.

#### 3.4.2.3 Some concluding comments on the introductory workshops

The organising of these workshops was facilitated through the interaction with, and participation in, an environmental education network. However, working with key people who represent organisations or 'authority figures' in education departments or colleges meant that, during the planning phase, I did not have sufficient contact with the teachers who were to participate in the process. Although participatory and collaborative, the planning phase of these workshops can be critiqued as maintaining many elements of 'top-down' or instrumental strategies for change.

The planning phase of the first cycle of enquiry emerged as the product of a number of factors:

- Progressive focusing through ongoing discussions (dialogue) and triangulation of data;
- Critical reflection on decisions and the implementation of those decisions;
- Encounters with teachers during workshops; and
- Ongoing critical reflection on my own role within the process.

The realisation of the importance of authentic participation in the participatory materials development process, which seemed to be enhanced and enabled by the establishment of relationships of trust, and by situations of ongoing interaction with the same group of teachers, emerged. It seemed that workshops held at schools with groups of teachers who knew each other, which were responsive and emergent rather than structured or imposed, created better opportunities for authentic engagement with issues of classroom change.

Gitlin (1990:446) argues that the degree to which the research process enables teachers to participate fully in the decision making process, examine their beliefs, actions and the school context, and make changes based on those understandings, presents an expanded and more political view of validity in research. It would appear from the stories told here that workshops which are more responsive, which have a balance between presentation, shared experience and critical reflection and which are contextual and emergent rather than pre-determined, structured and fixed, could contribute towards the validity of not only the research account but the research process and experience as well.

### 3.4.3 The action phase: getting feedback from teachers

A series of follow-up workshops were planned in which, it was hoped, teachers would share their experiences of working with the materials in their classrooms and that through this process their reflection-in-action would become visible. A further purpose of these workshops was to elicit feedback on the nature, structure and content of the materials, and to obtain a sense of how the redevelopment of the materials should proceed.

In planning the follow-up workshop, it became necessary that I first consolidate an initial analysis of the five introductory workshops which had been run prior to the series of follow-up

workshops (commencing in April, 1992). The purpose of this analysis was to inform the content of the focus group interview questions. Once again, as in the planning phase, I found myself working within different phases of the action research cycle at the same time. I was planning new introductory workshops, reflecting on the planning process, facilitating these introductory workshops and reflecting on these workshops, whilst I was planning and facilitating follow-up workshops (CR3.13). This process enabled ongoing reflection-in-action on the workshop process as a whole. Each type of activity in the process was then able to influence and inform the other, confirming the observation of Bawden (1991:21) that the action research process is "... frequently complex, dynamic and just plain messy".

Bawden (1991:20) captures the situation which faced me at the onset of designing the phase two workshops by illuminating the complexities of doing action research. He refers to the process of "... knowing how to go about improving our ways of knowing in order to inform our actions for change ..." as a 'double loop' of learning through *method* and *methodology:*

> Whilst we go about our business of using methods of enquiry into issues pertinent to our professional expertise, so we must go about the business of enquiry into our enquiry (Churchman 1971). All learning in this context involves two sets of experiences and theories: There is the 'first order' issue relating to the situation we are exploring, and there is the 'second order issue' relating to the way we are inquiring into the 'first order' issue. We must find out; find out about finding out; take action to improve the situation; and take action to improve our action taking! ... Like a restless electron, we seem to hop from one quantum level of learning to another, firstly engaged in learning about the issue to hand and then switching to learning about learning about the issue to hand. Effective learning results from bringing rigorous and critical order to these apparently chaotic shifts in focus (Ploman 1985, cited in Bawden 1991:21,22).

A review of the emerging trends in April 1992, and a reflection on the workshop process which I was using as a method (see 3.3.4.2), in conjunction with ongoing discussions with teachers about the materials development process, informed the nature and style of the follow-up workshops (CR3.17). A positive response from the teachers to a discussion-style feedback session determined the choice of focus group interviews as an appropriate method for the follow-up workshops. I subsequently constructed a questionnaire to focus the discussion in the groups (CR3.4), which, after critical reflection on the purpose and function of the questionnaire (see 3.3.4.6.), I changed to a series of questions which would guide the discussions (see table 3.6).

These questions once again centred around key themes which were used as the focus for compiling the discussion questions. These themes seemed to be emerging from the introductory workshops (AM7). The themes were:

- The nature of environmental education in junior primary classrooms. Through this theme I, together with the teachers, could gain an insight into their experiences of doing environmental education in a school context, and, through critical reflection, we could focus on the many aspects which seemed problematic and/or successful;
- The use of the We Care Primary pilot materials. Through this theme we could gain insights into how teachers had been using the materials, and question whether the use of the materials had made an impact on their teaching;
- Access to and use of other resource materials. Through this theme we could explore which materials teachers use frequently, and discuss how teachers could combine access to resource materials to support the teaching of environmental education;
- The nature and content of the We Care Primary pilot materials. This theme was included to elicit teachers' recommendations, suggestions, contributions and reflections on the nature, structure, format and content of the materials. This feedback would be used to inform its redevelopment; and
- The nature and scope of the We Care Primary project. This theme was included to discuss with teachers their vision for the We Care Primary project. This would include reflections on the nature of the project to date, as well as their perceptions on a future role for the project.

This focus group interview schedule (see table 3.6) was meant as a stimulant for critical reflection and discussion during the sessions and not as a rigid and prescriptive questionnaire. During some of the focus group interviews (FG1, FG5, FG7, FG8, FG9, FG10, FG11) discussion was led by, and corresponded closely with, the set questions and themes. Other focus group interviews (FG2, FG3, FG4, FG6) were less structured and consisted of less formal, but rigorous and critical discussions on the use and development of the We Care Primary pilot materials. An analysis of the discussions and teacher feedback is reflectively described in Chapter 4.

*Table 3.6* *Key questions for the focus group interviews held during workshop two (the follow-up workshop)*

| | |
|---|---|
| 1. | **Environmental education in the junior primary school phase:**<br>• What does environmental education mean to you?<br>• How do you see environmental education becoming a part of your school programme?<br>• Comment upon a networking approach to environmental education (contact and INSET with other teachers and educators). |
| 2. | **Using the We Care Primary materials in your classroom:**<br>• Discuss your classroom situation. What are the issues which most concern you?<br>• How did you use the We Care Primary pilot materials in your classroom?<br>• Do you think any changes occurred in your teaching resulting from the use of the materials?<br>• Were the We Care Primary pilot materials relevant to you, the children you teach and your local environment? |
| 3. | **Using other resource materials:**<br>• How relevant are the resource materials you use?<br>• Are materials accessible and easy to obtain in your teaching environment?<br>• Did you use any of the other tools and resources that were cross referenced in the We Care Primary pilot materials? Were they useful? |
| 4. | **Suggestions and adaptations to the We Care Primary pilot materials**:<br>• Do you have any recommendations, changes, suggestions or ideas for the redevelopment of the materials? |
| 5. | **The future of the We Care Primary project:**<br>• How would you like to see this project developing?<br>• Would you participate in the project in future?<br>• Do you have any suggestions for future development of other resource materials in junior primary? |

After each session, I wrote a report in my journal, this being a form of initial analysis. After I had

completed all eleven follow-up workshops, I prepared summaries of all, triangulated the information with data sources from previous workshops, wrote an analytic memo detailing the responses in the light of the theme questions (AM8; CR3.18), and compared and triangulated the data 'across' the workshops.

#### 3.4.3.1 Participatory materials development: implications of context and time

An analysis of table 3.1 indicates a decline in participation at the follow-up workshops and, more specifically, at the workshops which were held at centres away from schools. Attendance at these workshops dropped by at least half. The follow-up workshops were attended by 127 of the initial 265 teachers. In an attempt to establish the reasons why these teachers had not returned, I discussed it with the teachers who were present. The following extracts from my journal reflect this inquiry:

> I was disappointed at the turnout for this workshop. As no reminders had been sent out by the Teachers' Centre, this could have been a contributing factor. I discussed the turnout with the teachers and their general feeling was that the teachers had not had enough time to try the materials, and did not want to attend the workshop for this reason. They reported that they had experienced a similar time stress, but had at least worked with the books, and could therefore give feedback (journal entry, 28-04-92).

> Only ten of an expected twenty-seven teachers arrived for this workshop. I was really obtuse not to have realised that today was the afternoon before a long weekend. If I had still been teaching, I too would not have attended a workshop the afternoon before a long weekend! Better planning next time! However, the ten teachers that were there were eager to participate and we had an interesting discussion about the practicalities of after school workshops, and they expressed a concern about the excessive demands which were being made on teachers' time, especially after hours. They ascribed the reason for this to be a lack of parental involvement in children's education, which then had to be supplemented by the teacher. Further critical reflection on this issue drew us into a discussion on the former 'separateness' of schools and communities, where the parent's place is perceived to be 'out of the classroom', and where the involvement of parents in the schooling has been frowned upon by the education department in the past (journal entry, 30- 04-92).

> Saturday morning, and only one teacher out of the expected 11 arrived. One principal stopped by and brought me 6 questionnaires from his school and his wife's school. I discussed the possible reasons for this with C10 and the one teacher that did attend, and once again the discussion led to the problem of teachers having limited time, and the

> incredible expectations and demands that teaching places on their time (and free time especially). The teacher that was there reported that she had not had time to implement We Care Primary pilot materials, but that she had come because she felt that she would learn something from the workshop. I discussed the time problem she had experienced and she said that she had not been able (structured/rigid) to restructure her planning to include the activities, but that she had been adjusting her planning for the following term to include them then. She reported having included eight of the activities in her planning schedule for the next term. It appears that the time-stress experienced by teachers is an important factor in this process, as it is pointing to a lack of co-ordination in INSET activities which places excessive demands on teachers' time for after school activities. It also seems that teachers are experiencing a separateness between the school and the home lives of children. Teachers seem to be carrying the responsibilities of supplementing parents' roles. These are both symptomatic of the larger issues which are confronting our education system, and reflect major problems in education and the professional development of teachers. This will naturally have an effect on resource development which involves teacher participation. Although this workshop was cancelled as a feedback session, this discussion was a very valuable experience (journal entry, 9-05-92).

The lower attendance at the follow-up workshops held at the centres therefore led to an inquiry into the contextual constraints and realities, and issues of change which are confronting teachers at present. The implications for the development of participatory orientations to materials development seem to lie in finding better ways of gaining access to teachers and working with them than the traditional 'courses' at a Teachers' Centre.

Attendance at the follow-up workshops held at schools and with specialised interest groups (for example, the environment studies group and the pre-primary principals group) remained constant, and in the case of the pre-primary principals the attendance increased. This indicates that working at schools with teachers is a more effective way in which to maintain ongoing contact with teachers, a factor which was to influence the phase two workshops considerably. However, the need to interact with teachers from other schools was expressed again during these workshops, and the dangers of 'shared isolation' (W1, W3, W7, W8, W10) were discussed. A curiosity about how the different teachers were working in schools from different departments seemed to be visible, which reflected a lack of previous interaction between the racially divided schools. Questions and comments drawn from the focus group interviews reflect the movement towards integration and change which was occurring in the broader South African context at the time:

> ... are the DET teachers doing it like this? (FG3) ... what are they doing? (FG6) ... how can we meet and link with them? (FG8) ... our schools need to get together (FG10), ... we need to meet with schools from different areas (FG1), ... we must empower ourselves by learning about what is happening in other schools ... (FG7).

The teachers recognised the value and necessity of ongoing support for change and 'new ideas' through INSET projects and rated ongoing support and interaction as essential for the success of any such project (FG1, FG3, FG4, FG6, FG7, FG8, FG9, FG10). They did, however, have problems with the practical aspects concerning this, as such a process was time consuming and they already had excessive demands on their time. A discussion on the development of resource materials with teachers elicited comments such as:

> ... it can't be done in isolation from the classroom ... (FG2), ... we need to build it into INSET courses, but it must be well planned so that teachers don't have to attend hundreds of courses (FG4), ... they should be produced as part of the courses, like this one ... (FG9), ... teachers can do it, they just need the time to get together and discuss what they need and what works best ... (FG2), ...if we are involved, then we can make them relevant to the new teaching methods we are working with ... (FG4)

These comments indicated that teachers were both interested and able to develop resource materials, and indicated that resources cannot be produced and disseminated in isolation. A possible implication for participatory materials development may be that resource materials development should be part of (or complementary to) an INSET process, which would make the resources relevant to the context, needs and learning approach that was being followed (see 5.6 for further development of this argument).

Further reflection on the data collected through the focus group sessions, and triangulation with the trends and issues identified through the introductory workshops, served to confirm the trends listed in table 3.2. Further trends and issues identified from the follow-up workshops are listed in table 3.7.

Triangulation with sources of data gathered through other contact sessions (CR3.13), field notes and documents (DF20, DF23, DF27, DF30), workshops such as the Western Cape INSET Policy Initiative workshop (DF28), the EEASA '92 workshop (DF25), Stellenbosch University B.Ed workshop (DF29) and discussions around these workshops were used to refine the identification

of trends and issues (AM 14).

*Table 3.7* *A summary of further trends identified from the focus group sessions during the follow-up workshops*

| **Trends and issues** | **Number of workshops** (total workshops held = 11) |
|---|---|
| Use of the materials as a supplementary resource, complementing theme work and syllabus work | all |
| Reported enjoyment and increased participation by the learner as a result of using the activities | 9 |
| An emphasis on the constraints of teaching (time, structured planning, lack of parental involvement) | 10 |
| Reflection on their methods of teaching as a result of using the We Care Primary materials | 6 |
| Agreement that the format of the materials was suitable, and that small changes needed to be made (layout, illustration, indexing etc.) | 9 |
| A concern that the project should continue, and that more resources around other topics should be developed | all |
| Agreement that further resources should be relevant to the local environment and to junior primary learners | all |
| Agreement on the value of the We Care Primary materials as a resource for teaching environmental education in the junior primary phase (complementary to environmental studies) | 10 |

The returned questionnaires (CR8) were also analysed and used as supporting data (CR3.9), triangulated with the trends and issues emerging from the phase one interaction with teachers. The trends and issues were then sorted into categories and themes which are briefly described in 3.5 and discussed in Chapter 4 (CR3.10).

## 3.5 THEMES EMERGING FROM THE TRIALING OF THE WE CARE PRIMARY PILOT MATERIALS DEVELOPMENT WORKSHOPS

A substantial amount of data was collected from (ongoing) interaction with teachers and educators over a period of six months. Through ongoing analysis and employment of the action research strategies of planning, action and reflection, the data was used to help establish a dynamic, interactive and critical process. Upon reflection on the action in the context of socio-political changes in South Africa, and in the context of the aims of this research, a number of themes emerged as 'outcomes'or reflections on the trialing and testing of the We Care Primary pilot materials. These collective reflections represent the 'capital' of experience gained through the first phase of developing a participatory orientation to materials development for junior primary environmental education. The themes are analysed and described in the following chapter, and are used to inform the planning for phase two of the project and the redevelopment of the We Care Primary pilot materials. The themes are:

- The We Care Primary pilot materials;
- The teaching and learning context in a period of change;
- Teacher participation in environmental education materials development;
- Environmental education in the junior primary school phase; and
- Emancipatory action research: rhetoric or reality?

### 3.5.1 The We Care Primary pilot materials

The research process was planned to address a perceived need for environmental education resource materials in the junior primary school phase (see Chapter 2). The development, trialing and testing of the We Care Primary pilot materials formed the focus of a developing participatory orientation to materials development. This theme remained the focus of the research activities, and a review of the data gathered through the trialing phase of the We Care Primary pilot materials indicated the following trends:

- An apparent need for appropriate, relevant and accessible materials in junior primary;

- A relationship between materials development and curriculum development, with the materials informing curriculum development, and curriculum development informing materials;
- Diverse patterns of use of the We Care Primary pilot materials, indicating the importance of teacher choice and decision making in relation to the use of materials;
- A developing participatory orientation to materials development through teacher participation in formal education settings, which offered significant insights into new and better ways of sustaining teacher participation in this process; and
- Critical reviews of the We Care Primary pilot materials which included comment on their content, nature, structure and format, which would inform the redevelopment of the materials.

### 3.5.2 Teacher participation in environmental education materials development

A central theme of the research project was to facilitate teacher participation in the materials development process through actively involving teachers in the process of trialing, testing and redevelopment of the We Care Primary pilot materials. The issue of participation and the processes which enable authentic, sustained participation in the development of materials emerged through ongoing critical reflection on the process, the nature of the workshops, teachers' discussions and their enthusiasm for participating in the project. Aspects of developing a participatory orientation to materials which emerged from the data are:

- The structure and nature of the 'facilitation' of teacher workshops was an important aspect in enabling teacher participation in materials development processes;
- Collaboration and interaction between teachers, between schools and across education departments was made possible through these workshops;
- The development of teacher voice through participatory orientations to materials development was possible; and
- The relationship between ongoing support, relationships of trust, and authentic participation was crucial, and it seemed that time and ongoing interaction with smaller groups of teachers at their schools was more conducive to the establishment of

relationships of trust and more authentic participation.

### 3.5.3 Environmental education in junior primary

The We Care Primary pilot materials were originally designed to provide materials for junior primary environmental education, and were developed as a result of a perceived need for materials for this school phase. The lack of environmental education resource materials for this school phase was obvious from the start of the project (see 2.3). Developments in the national policy making arena which indicated that "... the future emphasis in education must be at the early primary level" (Taylor, memo to SANF 11-11-1991), and transformation of this school phase was a central motivating factor for the development of the project and became a central theme of the workshop process. A key feature of the transformative initiative was an emphasis on the development of an understanding of environmental education in the junior primary phase which brought the following aspects of the data analysis of this process to the fore:

- An acceptance and recognition by the teachers that environmental education should inform curriculum development and classroom activities, and, in the process, become an integral focus in formal education curricula;
- Differing perspectives of environmental education; and
- Debate around the subject of differences and similarities between environmental education and environment studies in the junior primary curriculum.

### 3.5.4 The teaching and learning context in a period of change

Ongoing critical reflection on the process of materials development, and the use and trialing of the materials in the context of junior primary education in South Africa, provided an insight into the pedagogical context of junior primary classrooms. Indications from the data collected during the phase one trialing process were:

- An awareness of impending change in the education system, which is related to broader socio-political changes in the country;

- Concerns and frustration with the teaching context and the growing responsibilities of teachers as educators;
- Reflections on the environmental realities of children and how this relates to the school curriculum, reflections on a number of social issues which influence the children's learning, and reflections on the way in which children learn and the implications of these aspects for junior primary teaching and materials development were highlighted;
- A concern about the provision of adequate INSET, and the impact which INSET has on teaching, together with a concern for a lack of co-ordination, long term vision and available time in INSET processes. The tensions between a need for ongoing INSET and the related time implications emerged as a central issue.

### 3.5.5 Doing emancipatory action research: rhetoric or reality?

A further theme which emerged from the data was my preoccupation with the complexities of trying to do action research. Working within a framework provided by critical theory and the ideals of emancipation, enlightenment and empowerment (see Chapter 2), together with an allegiance to the democratic and socially critical principles of emancipatory action research as the research methodology for this project, created a situation which was fraught with questions about the process of doing research. I was experiencing what Popkewitz (1991:238-9) refers to "... the knot of genuine tensions and contradictions that are endemic to an academy that seeks to combine activism and scholarship" (cited in Janse van Rensburg 1995:158). Some of the questions and tensions which I was experiencing through critically reflecting on my practice, whilst reflecting on the processes and issues of the project and the teachers' participation in this research process, were:

- A concern with my role as researcher in the process, and the complexities of facilitation in an emancipatory action research process;
- A concern about an apparent tension and inherent contradictions between the pragmatic aspects of doing research and the paradigmatic concerns of the research, which often manifested in actions, activities and situations which were directly in conflict with the theoretical assumptions and foundations of the chosen theoretical orientation.

- A concern about my position of power in the process which assumed that I was able to empower and emancipate 'others', many of whom I was learning from. I, through the interaction, often found that it was I, and not necessarily the 'others', that were being empowered;
- The establishment of validity in the research process which would reflect the theoretical orientation chosen to guide the study.

A review of the research process is provided in Chapter 6 of this report. The themes highlighted here are discussed fully in the following chapter to further clarify the development of a participatory orientation to materials development within the We Care Primary project.

## 3.6 SUMMARY AND CONCLUDING COMMENTS

This chapter has provided an overview of the development of a theoretical orientation to the study, which was grounded in the socio-historical context of the project. An emancipatory action research design was chosen to further the goals of democratisation of school curricula and teacher participation in the development of the resource materials in such a way that the teachers involved in the process could become collaborative co-learners and co-researchers of their own practice, with due consideration for the social, political and historical sources of power and domination within the world of teaching and learning. The process of critically reflecting on their own learning and their classroom practice would be informed by reflection on a wide range of data sources. This process would then help to inform the redevelopment of the We Care Primary pilot materials. This process was also intended to stimulate and develop environmental education as a curriculum focus in the junior primary school phase, and help to make education more relevant and classroom learning more active and integrated. In this way, the project could attempt, through a process of planning, action and reflection, to make an active contribution towards the development of quality education in South Africa (see Chapter 2).

The first action phase of this project was carefully planned through consultation and reflection with a number of Western Cape educators. Access was gained to work with teachers, and a series of workshops were planned which consisted of two workshops - an introductory workshop and

a follow-up workshop - planned to take place a month apart. Through these workshops insights were gained on teachers' needs for environmental education resource materials; further development and use of the We Care Primary pilot materials for the junior primary school phase; the relationship between environmental education and environment studies; the contextual realities and difficulties which teachers face and the impact these have on their teaching; and the environmental realities and problems facing young learners and how these impact on their learning.

Ongoing critical reflection on the nature of the participation in the trialing and testing of the We Care Primary pilot materials provided insight into possible ways of establishing the conditions necessary for a participatory orientation to resource materials development. Ways of working with teachers that ensured ongoing and more authentic participation were explored. If ongoing, sustained involvement of teachers in materials development is to materialise as a legitimate and grounded process, consideration of the contextual realities of the teaching situation is vital. In reflecting on the process of gaining access to teachers and attempts at sustaining contact with them, the challenge seems to lie not so much in gaining access and starting a process of interaction with teachers around materials development, but rather in the ways in which contextual realities of teaching are confronted and challenged. Through this conditions for ongoing, sustained interaction and change may become possible. Working with schools, at schools, or linking in with existing interest groups would seem a more appropriate way of approaching materials development with teachers than 'rushing in' and calling teachers out of their classrooms to 'do' materials development.

As traveller, I had embarked on the first leg of a journey which, although carefully mapped at the outset, led me on to a large number of tracks, some easy, some rough. Curiosity and rigour caused me to attempt an exploration of all these pathways and tracks to some degree during this first phase in order that I could be able to re-map and plan the next phase of my journey. I had now reached a point where the road commanded the view of a wide panorama, in the middle of which flowed a clear stream. It is here that I pause for a while and reflect on the pathways and tracks which I have followed, before I begin planning the next phase of this journey.

# CHAPTER 4

# REFLECTIONS ON TEACHER PARTICIPATION IN PHASE ONE OF THE WE CARE PRIMARY MATERIALS DEVELOPMENT PROJECT

*Change is a journey and not a blueprint* (Fullan 1993:21).

*Much of what is distinctive and important in human knowledge originates in its social nature. What we know, or can remember, is largely what we have experienced and shared with other people* (Edwards and Middleton 1986:423).

## 4.1 INTRODUCTION

In Chapter 2, I mapped an unfolding and emerging trend in South African education which seemed to be advocating transformation in education through teacher participation and democratisation of schools. I proposed that this trend would help to provide clarity on the potential role of the We Care Primary materials development project in educational transformation. Pathways of transformation for this project were formulated as a response to the current pedagogical climate in junior primary classrooms (see 2.4). The phase one research activities provide a rich source of data for reflection[1] on the route being taken towards the transformatory ideals of the project (see 2.4.3). This, in turn, provides a perspective on the

[1] Gilroy (1993:125-127) clarifies the concept of reflection by noting three different conceptions of the term, relating to the varying emphases given to 'reflection'. The first is Dewey's, which emphasises the consciously rational search for solutions to problems, the second is Schön's which concentrates on the notion of 'reflection-in-action', viewed as the exercise of interactive, interpretative skills, in the analysis of complex and ambiguous problems. This concept of reflection takes as problematic the teaching context as well as practice. The third conception of reflection is that of Zeichner who includes as problematic, and thus worthy of reflection, the broader contexts provided by the curriculum, the school and the society. Given the variety of meanings, it would seem that 'reflection' is a contested concept, and, without clarification in its context of use, may become merely a piece of 'common rhetoric' (Zeichner and Tabachnick 1991:1). In this thesis, 'reflection' is used in accordance with Zeichner's terms, which include reflection on the broader contexts of curriculum, school and society.

complexity of change and transformation, and provides direction for the redevelopment of the materials and re-mapping of the project for phase two.

To provide rigour to a reflective description on the phase one project experiences, in the context of the socio-historical location of the research question, I offer some perspectives on the role of teachers in the process of transformation. Through interpretation of the data, and the writing of this reflective description, I wish to use this chapter as a way to continue sharing the experience of working with teachers towards change. McTaggart (1991a:178) notes that "... it is important to recognise that the interpretive aspect of participatory action research is not an end in itself. Its primary purpose is to make action taken by individuals and the collective in the situation better informed and more prudent". This reflective description (which constitutes this chapter) is therefore located within the main thesis of teacher participation and the key themes or sites of change, transformation and further research identified in Chapter 3 (see 3.5), with a view to informing the redevelopment of the We Care Primary pilot materials and the planning for phase two of the We Care Primary project.

## 4.2 EDUCATIONAL TRANSFORMATION AND THE ROLE OF THE TEACHER

The language of educational reform has changed dramatically over the last two decades from marginal conceptions like 'change' and 'innovation' to fundamental or systemic ideas like 'reconstruction' and 'transformation'. This change from notions of evolution to revolution is advancing in response to fundamental societal shifts and changes (Davidoff *et al.* 1993; Hartoonian 1991:22; Janse van Rensburg 1995; McGregor and McGregor 1992; see 2.2.2). Janse van Rensburg (1995:142) emphasises a preoccupation with change in environmental education when she notes:

> To work in the arena of education with a focus on the environment [and educational transformation] in South Africa in the early nineties, is to be very aware of the issue of change. Most significantly, a focus on change also benefits a conception of environmental education as a *process of* (O'Donoghue 1993, 1994) and a *focus for* social change (Fien 1993; Huckle 1993; Robottom and Hart 1993; O'Donoghue 1993; cited in Janse van Rensburg 1995:142, my emphasis).

To gain perspective on the potential of teachers to contribute to social change, requires that

attempts at reform be viewed with critical circumspection and vigilance. Illumination of the ideologies, assumptions and perspectives underlying the different visions and means of educational reform is needed to establish common and critical dimensions of real transformation and change[2]. One such dimension is the political scenario through which educational transformation is to be enacted. This may help us recognise accompanying possibilities and necessary conditions for democratisation of the processes of change and transformation (see 2.4.2). Jordan (1990, cited in Christie 1991:302), in discussing the future education system in South Africa, points to the importance of gaining clarity on the nature of transformation by noting "... (w)e have to define more clearly the character of the transformation we're striving for", which implies a need for educators and researchers to seek clarity and transparency in transformative initiatives.

In addition we should recognise that the current educational crisis has to do largely with past trends and ideological practices which, in effect, disempowered teachers at all levels of education (Christie 1991; Giroux 1985:376; Hofmeyr and Jaff 1992:171; NEPI 1993:235). A recognition of this condition in South African education is a necessary theoretical precondition for teachers to take their own development and transformation processes seriously, and for them to find ways of reaffirming their role and position as key role players in transformation initiatives. The NEPI document (1993:235-237) captures the realities of the South African situation when it notes that

> ... (a)fter decades of apartheid, the capacity of South Africa's teaching corps is limited in several respects ... [and] the majority of South African teachers are disadvantaged by their conditions of work, as well as by the poor quality of their training. Many schools are poorly managed and under-resourced, with limited and sporadic, if any, in-service support. Political conflict and the breakdown of a learning culture have ravaged teaching in much of the country, further undermining the motivation and morale of teachers.

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2 Janse van Rensburg (1995:167, citing Doll 1989:247-250) refers to a crucial distinction between 'transformatory' and 'accumulative' change. "The former represents a change in view, perspective and methodology, involving *'internal reorganization'* through *interaction*. The latter implies *external control* of direction (as in the management of social transformation, targeted messages or empowerment through capacity building). Transformatory change recognises, encompasses and allows for indecision and indeterminacy. The emphasis shifts to '... *a process of development* rather than a body of knowledge; ... *ends become beacons guiding this process*, and the course [of learning] *itself transforms* the indeterminate into the determinate".

Traditional structures and practices of school reform have been dominated by paradigms and ideologies borrowed from the ideologies and techniques of industrial management. These are applied to school environments, often with little success (Davidoff *et al.* 1993; Giroux and McLaren 1986; Hargreaves 1994; Popkewitz 1987; Schofield 1994). During the decades of apartheid education, school reform consisted of an agenda dominated by control and manipulation which advocated for, or implicitly assumed, authoritarian, large scale, expert-directed and rationally controlled prototypes of change (Christie 1991; Davidoff *et al.* 1993; Janse van Rensburg 1995; NEPI 1993). In addition to this, teachers were faced with instrumental rationalist approaches to teacher assessment and state-wide standardised testing of school reform. This was founded in a 'quick fix' mentality that prevented teachers, administrators and parents from seriously examining the purposes, processes and structures of contemporary schooling in meaningful ways (Goodman 1994:113; Hofmeyer and Buckland 1992:15-59).

Contemporary society provides an exciting vision for the future: it is a time of new freedoms, great changes in societal organisation and outlook, and rapid expansion of both information and knowledge. These factors, coupled with the a deepening of the global environmental crisis (see 2.2.2), are calling for schools to 'prepare' a new kind of citizen. Learning new ways of living in a democratic and free country and a rapidly expanding global community will dictate many of the challenges in future education. The ability to handle information easily, ask new questions, solve problems, and think critically and creatively will become important skills for survival in a new era.

Before such a preparation can be made for students, it will need to be created by teachers for themselves. Educators will need to move beyond the historical and present conditions to redress, repair and renew the almost fatal flaws in a currently impoverished and largely dysfunctional education system (Davidoff *et al.* 1993; Flanagan 1994; Maseko 1994). The legacies of the apartheid regime and the long standing influence of reductionist and structured underpinnings of seventeenth-century Western education provide enormous challenges for the processes of educational transformation. Hartshorne (1992) links the issue of *quality* in education to teaching and teaching materials and sees these as central contributors to the transformation process. He argues:

> While new structures and increased provision of facilities and equipment are imperative, of themselves they will not bring about a transformation of the education system. Education takes place not in the offices of the bureaucrats or in the legislature, but in the classrooms of the country, in the everyday interactions of teachers and pupils in a learning situation. The quality of what happens there, given reasonable physical conditions and class size, depends on two major factors - the *commitment and competence of the teacher*, and the *quality of the teaching materials* that are available to them and their pupils (Hartshorne, in McGregor and McGregor 1992:6).

To help clarify the route of action towards transformation, it may be prudent to ask which of the many interrelated aspects of education should form priorities for transformation: transformed policy; new pedagogies and teaching methods; empowered and better qualified teachers; relevant curricula; or the development of quality resource materials? It appears logical that as no one aspect of transformation should take precedence over another, teachers need to become central role players in transformation debates and initiatives from *within* schools and need not be reliant on policy or curriculum decisions to 'direct' classroom transformation and change. Teachers already constitute a substantial resource for the project of transformation. They have more knowledge about children than any other group, a knowledge that many of them have gained over many years or even decades. During that time many of them have acquired effective teaching strategies and problem-solving abilities. Some of them are highly skilled also in subject studies, though many of them received an inadequate initial education through formal structures. The great majority of primary school teachers are dedicated to their work and are anxious to do it better (Walker 1988:46), and as such offer potential for educational transformation from within the educational arena.

Teacher participation and involvement in *changing teaching* should be placed firmly on the agenda as a central focus around which issues of transformation are developed. Teachers are often blamed for 'ineffective schools' (Reynolds and Parker 1992:80). Statements such as these fail to recognise the lack of trust and confidence in the teachers' abilities to control change. When teacher and student tests, standards of certification, structured time tables, and over-structured and prescribed common curricula are used as vehicles of change, control emerges as the first concern (Hartoonian 1991:22). Teachers get messages that the public does not trust them and that they are less than professional. They make up what Hartoonian (1991:23) calls the 'practitioner class' and are not part of the so called 'expert class' who create the

theories and materials they are to use.

The Centre for Educational Policy Development (CEPD 1994:4) suggests a reconstruction model for teacher education which states that "... the growth of *professional expertise* is the key to teacher development". In addition, *self assured decision making* should be developed amongst all personnel involved in teaching and teacher education (CEPD 1994:6). However, many contemporary authors working in the field of educational transformation realise the complexity of the task, and warn that political romanticism has limited value for the real demands of a changing education system. Fullan (1991:102) notes that "... change is full of paradoxes. Being deeply committed to a particular change in itself provides no guidelines for attaining the change". The process of change is an issue of great complexity[3] (see 5.7) and building a long-term vision is a slow and often painful process, for, as Robinson (1992:12) notes, "... the rhetoric of change ... is far easier than reality". By its nature, educational action research as critical educational science (the orientation chosen for this study) is concerned with the questions of control and change in education, and it comes out on the side of the control of education by self-critical communities of teachers (Davidoff 1993:75). Carr and Kemmis (1986:205) see emancipatory action research as "... an empowering process for participants; it engages them in the struggle for more rational, just, democratic and fulfilling forms of education". However, Robinson (1993), Davidoff (1993) and Walker (1989, 1990, 1993) all note that the seemingly simple task of empowering teachers through materials development and other interventions is limited and constrained by a host of subjective and objective conditions for teachers. They do not conclude that emancipatory teacher development is a fruitless task, but rather urge for short term steps that can "... serve the longer-term goal of building a tradition of ongoing reflective inquiry and professional development on the part of teachers" (Robinson 1993:71).

The reflective description in this chapter which highlights the themes identified in Chapter 3 (see 3.5), provides further insight into the nature of some of the changes occurring in the first phase

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[3] For a discussion on the complexities of change, views on the nature of change, models of change and a critique on these models of change, and how these different orientations to change seem to be associated with different orientations to research and environmental education refer to Janse van Rensburg (1995:41-192). See 5.7 for an extension of the argument on the complexities of educational change.

of the We Care Primary materials development project and some of the short-term steps which have been taken towards creating the conditions for emancipatory action research and socially critical environmental education. To add a longer-term perspective on the extension of the phase one activities, I have made use of follow-up interviews (done two years after the initial workshops) as additional data. A series of nineteen interviews (CR3.5) were done towards the end of 1994. All the teachers who were interviewed, had participated in the first phase of the project, and were still using the We Care Primary pilot materials (I2, I5, I6, I9, I10, I11, I12) or were using the pilot materials and the redeveloped materials (I1, I3, I4, I5, I7, I8). The 1994 interviews, used here to support the data collected during the first phase of the project, also indicate the fluid and overlapping boundaries between phase one and phase two of the project (see figure 1.1), and add validity to the data collected in the first phase of the project. I make use of extensive quotations from interview data, video data and workshop data to enable the voices of the teachers to be heard through the description, and through this process, I hope to present an authentic account of the interaction with teachers. This will illuminate the potential role of teachers in transformatory initiatives in junior primary education. Full details of data collected on the themes will, for the sake of brevity, not be included. Rather, a selection of data which offers critical insights or pertinent perspectives into the research question, research process and emerging themes is used. Through this process of data analysis and use, the central themes of teacher participation and materials development are illuminated to offer a contextualised and critical account which is able to inform the planning and decisions made in phase two of this research project.

## 4.3 A REFLECTIVE DESCRIPTION OF THE THEMES EMERGING FROM THE TRIALING OF THE WE CARE PRIMARY PILOT MATERIALS

The planning and action phase of the first cycle of inquiry in this project has been concerned with the development of a participatory orientation to the trialing and development of the We Care Primary pilot materials for junior primary environmental education. Whilst teachers were not engaged in formal action research to guide the reflections on their practice, ongoing critical reflection and interaction around common concerns enabled teacher participation to inform the process of ongoing materials development in the We Care Primary project. Critical reflection

on teaching practice, contextual constraints and the use of the We Care Primary pilot materials in schools, demonstrated some of the tensions between the rhetoric and the reality of change and transformation in classrooms.

### 4.3.1 Theme one: The We Care Primary pilot materials

Developing a participatory orientation to the trialing and redevelopment of the We Care Primary pilot resource materials offered perspectives on the use of the materials, the development procedure, and the nature, content and structure of the materials. A mutual relationship between materials development and curriculum development was highlighted. The reporting of the interaction during the action phase of the first cycle of inquiry reflects the potential of teachers to contribute in meaningful ways towards the development of quality educational materials.

#### 4.3.1.1 The need for materials in junior primary education

It is commonly accepted in South Africa that the junior primary school phase is severely under-resourced (Flanagan 1995; Kromberg 1993; Macdonald 1991; McGregor and McGregor 1992; Motala 1993) and that those resources which are available are often of poor quality and do not address the classroom needs of teachers and learners or the environmental contexts of the learners. Issues of relevance, accessibility, quality and provision all relate to the provision of quality educational materials in the junior primary school phase (Macdonald 1991:57-65; Pease 1991:46). As noted in 3.4.2. one of the key themes addressed through the action phase of this research project was to reflect on the current status of environmental education resource materials in the junior primary school phase (AM5). Group discussions and workshop data indicated:

- *A lack of appropriate materials for the teaching of environmental education* for this school phase (W1-W13);
- *A need for resource materials which are relevant to the social environment and living conditions of South African children* (W1-13, FG1, FG3, FG5, FG6, FG7, FG9);
- *A need for resource materials for theme work with easy to use activities* (W1-13, FG1-

10). From a review of the group feedback (workshop data and focus group interviews), this appeared to be the most significant requirement (AM5, CR4.1) for environmental education resource materials in junior primary;

- A lack of *environmental education materials which are accessible to younger learners.* This implies a consideration of language and reading levels and a consideration of second language learners, as well as a consideration of appropriate content of the materials. The need for materials in Afrikaans was expressed by many teachers at these workshops (W1, W4, W6, W8, W9, W12, W14, W22), and requests to translate the materials into African languages (W5, W23, DF28, DF60, DF83, DF88, DF85) reflect the current language policy of mother tongue instruction in the junior primary school phase; and
- The need to solve problems of access to and availability of resource materials through ideas such as the establishment of communal resource centres, directories, and idea banks in schools (W2, W3, W6, W9, W10, FG2, FG10, FG6).

Implications for the We Care Primary materials development project indicate that resource materials for this phase of schooling should be appropriate for the junior primary school phase; relevant to the local environmental context of the children; suitable for use with the thematic approach to teaching in junior primary classrooms; accessible to teachers; and that information about appropriate materials should be made available to teachers. As one teacher aptly stated:

> We have the general stuff, but we need local materials, but that is very personalised. Our worksheets took a lot of time to prepare, but we had to throw out a lot because they were just not relevant ... We only found that after we sat down and thought about it. I think we would need some guidance to give us ideas and some new ideas. We bought a lot of books in, but they were from overseas and could not really help us. The post office and street and the traffic does not look like South Africa's (I8, pers. comm. 25-10-1994).

This particular extract, and the aspects outlined above, indicate teachers' frustration with resource materials of limited relevance, and offers an indication of the value of collaborative, critical reflection by teachers on the nature and purpose of the materials they use.

#### 4.3.1.2 The nature and content of the materials

In support of the above quotation from a teacher, Macdonald (1991:60) argues that considerations for a new curriculum, and by implication curriculum materials, should

> ... take into account day-to-day living beyond work ... be preparation for life ... be very careful and critical of what goes into the new syllabus [and materials] when the curriculum is restructured on a more skills-and-problem-solving basis ...

Macdonald (1991:62) critiques the current curriculum for not recognising or teaching concepts and skills which are needed for critical and creative thinking, problem solving and communication. She sees the integration of these skills as a means of making learning more meaningful, because they provide challenges beyond the memorisation of text. Macdonald, together with the NEPI policy documents (1993), the ANC Policy Framework for Education and Training (1994), and the White Paper on Education and Training (1995) supports the idea that

> ... conceptual skills and processes should be given more prominence in syllabi ... if a procedural curriculum is to be developed and classroom practice is to be changed, teachers are likely to need support both in terms of *materials* and *in-service education*, and this needs to be planned for in terms of resourcing the curriculum (NEPI 1993:112-114, my emphasis).

Macdonald (1991:64) sees the nature and content of new educational materials as having an important function to support teachers in learning to incorporate process skills and concepts into their curricula.

The We Care Primary pilot materials were developed with a view to providing children with opportunities to engage in a wide range of learning activities, enabling them to acquire knowledge and reinforce their understanding of the environment, whilst developing process skills or competencies which enable them to interact with their environment in meaningful, constructive and critical ways. Through a discussion and interview with the originators of the We Care Early Years materials, I was able to establish that the choice of concepts as the organising principle of the original We Care Early Years materials (which subsequently informed both the We Care Primary pilot materials and the published We Care Primary materials) was to "... develop children's broader understanding of their environment through

organising knowledge according to key environmental concepts ... and through active involvement in the learning of skills for environmental problem solving ..." (D2, pers. comm. 30-01-1992). These concepts (seven key environmental concepts, see figure 4.2) were chosen to complement the Cape Education Department's pilot project for junior primary environment studies (D2, pers. comm. 30-01-1992; I7, pers. comm. 11-11-1994). At the time of the development of the We Care Early Years materials (see 2.2.3), these concepts were not widely used for curriculum development in junior primary education (D2, pers. comm. 30-01-1992; see table 4.1).

The We Care Primary pilot materials were innovative, and supported active learning pedagogies, the development of learner skills or competencies, and interaction between the teacher, child and local environment. These aspects thus supported a change in teaching methodology in junior primary classrooms (see 4.3.3.3 for an account of how the activities were perceived to contribute to change in the classroom). The conceptual and procedural nature of the materials were later to influence the project development considerably (see 5.5 and 5.6). Macdonald (1991:60) realises the value (and complexity) of using innovative materials which support the integration of process skills with the development of knowledge and understanding when she notes that

> ... teaching a process skill is a slower process than teaching facts, but the end result is much more powerful ... Having learned certain process skills, children are able to find out much more on their own than they would with a teacher.

The integration of process skills into the We Care Primary pilot materials significantly affected classroom learning, with teachers almost unanimously reporting more participation, more enjoyment and what they perceived to be 'better learning' by the pupils (FG1-12, I1-12).

A large number of teachers attending the workshops appeared to be enthusiastic about the many ideas which were contained in the booklets, confirmed throughout phase one and phase two by statements such as

> ... it gave us ideas for our project work (FG1), ... gives us ideas for new approaches (FG3), ... its an opportunity to get ideas and try out new methods (FG8), ... other ideas can be obtained and children can get different approaches (FG3), ... I found the ideas for activities very helpful (E3), ... it brings a variety of activities into our classrooms (E18).

However, being interested in the materials and liking the ideas does not necessarily influence classroom teaching, and many teachers were unfamiliar with the teaching and learning methodology supported by the nature of the materials, resulting from a lack of exposure to active learning methodologies, modernist trends in educational practice (see Chapter 2) and a tradition of teacher dominated pedagogy (see 2.4.1). This reflects Stevenson's (1987) position on the reasons for the tensions between schooling and socially critical environmental education, which he ascribes to teachers' pedagogical knowledge and experience. Comments made by student teachers after using some of the We Care Primary activities during their practice teaching reflects the pedagogical realities of many junior primary classrooms and highlights the lack of active learning pedagogies in junior primary teaching and learning:

> These activities are so different from the old syllabus, the old syllabus was so stagnant ... the activity was strange to the teacher in the class ... these older people are quite stagnant you know ... they are very stereotyped about their lessons ...; and
>
> I was starting the lesson and the children told me, but miss, we don't do it like this, so I said to them, let us try something different today ... and in the end they enjoyed it ..." (I15, pers. comm. 3-11-1994, translated).

It appears, therefore, that although teachers are appreciative of new ideas, these are often not implemented due to situational constraints (4.3.3.1 and 4.3.3.2), habit, and lack of exposure to new ideas and insufficient support for the innovation. Joyce and Showers (1984:84, cited in Robinson 1994:4) argue that "... for most people to use an innovation to the extent that it becomes coherent in the context of their existing teaching style, probably requires the companionship, support and instruction provided by what we call on-site coaching". The development and provision of support for the implementation and further development of competency-based methodology (developed through activities in the We Care Primary pilot materials), was to become a focus of ongoing materials development, curriculum development and INSET in phase two of this research project (see 5.5 and 5.6).

Further discussions during the focus group interviews (CR3.18), and later triangulation with the questionnaires (CR3.9), highlighted a number of aspects relating to the nature and structure of the materials. These suggestions were used to inform the redevelopment of the pilot materials

(see 4.4) and included:

- The inclusion of more topics in the booklets, especially topics which address local, relevant environmental issues (CR4.2), syllabus areas or subjects of interest (FG1, FG3, FG4, FG6, FG7, FG8, FG12);
- The inclusion of separate worksheets for optional use;
- The inclusion of more games and cross-curricular activities;
- The inclusion of an index for easy access to the materials;
- An extension of the cross-referencing of other materials to include local resources and information on places of interest in the local area;
- The retention of the format, size and flexible nature of the package (FG2, FG3, FG5, FG10, FG12; see CR3.9);
- Improvement of the page design and layout to make the materials more 'reader friendly' and the inclusion of more (and better) illustrations (FG1-12, CR3.9);
- The changing of some activities to be more relevant and user friendly (FG2, FG5, FG6, FG, FG11, FG12 see CR4.3); and
- The provision of further background information to extend some of the activities (FG3, FG4, FG, FG11).

This reflection on the nature and structure of the materials confirms the perspective that teachers have a valuable role to play in the development of resource materials. Their insights and comments were sound and relevant to the teaching context, and could thus help to improve and change the materials. This reflective description also provides insight into the role that educational materials can play in introducing alternative teaching methodologies and new ideas for interactive classroom practice. However, it is not the materials themselves that bring about change, but rather *the quality of the interaction process around the materials.* Taylor (1995:5) describes the perception that materials themselves can bring about change as a myth[4] which is

[4] Cornbleth (1987:189) describes the phenomenon of myths in education as tending to be "... abstract and transhistorical, general principles ... which through repetition and reification ... come to be treated as 'real' or natural". She sees myths serving multiple, interrelated social functions which include: to explain and direct action; to justify particular interests or practice; to dramatize ideals; and to provide cultural cohesion.

prevalent in environmental education. He notes that while materials

> ... may be able to *support* better education processes, ... as a technology [they] can never *direct* social change ... The expectation that [materials] can cause the desired change in the users, fails to accommodate the non-rational nature of social change, or the importance of a social milieu in which the materials are applied; including the people, places and issues involved.

Materials development initiatives should therefore be combined with some form of interaction to support the change process. Feedback on the materials confirm the valuable role that teachers can play in evaluating materials through reflecting on their practice, and through using the materials in their classrooms (see 4.3.2.3 and 4.3.3.3 for further reflection on how the We Care Primary pilot materials influenced classroom practice).

#### 4.3.1.3 The materials development process

Given the value of teacher feedback and contributions to determine an appropriate structure and a valid content critique on the materials, and given the fact that the nature of the materials and some possibilities for use in classrooms are made visible through trialing the materials, I argue that teacher participation and ongoing critical reflection should provide a critique-in-action which is central to the development of materials. Recommendation Six, adopted and unanimously passed at the SACHED/NECC[5] 'Publishing for Democratic Education' National Conference in 1993, supports this argument and reads:

> In reconstructing education, we note that considerable research, trialing and consultation and participation by learners and educators is needed in order to ensure the highest levels of quality, accessibility and appropriateness of books in meeting the needs of learners, educators and education planners (Kromberg 1993:179).

Reflection on this statement, at the time, raised a number of questions about the trialing of the

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[5] SACHED is the acronym for the South African Committee for Higher Education and NECC is the acronym for the National Education Co-ordinating Committee. A conference titled "Publishing for Democratic Education" was organised in July 1993 by these two educational organisations, with delegates representing all major publishers, national educational and non-governmental educational organisations.

We Care Primary pilot materials and the development of a participatory orientation in phase one of the project. This was to prove significant to the central thesis of this report. A journal entry highlights the complexity of this debate:

> I've just been reading the NECC conference reports and something is really worrying me again. Just when *is* participation deemed to be 'considerable' enough for the provision of quality education, and what actually counts as participation ... how does one distinguish between 'considerable' participation and pseudo participation? I will need to discuss this question with someone as it is increasingly becoming problematic as I read more and more about emancipatory action research and participatory curriculum development initiatives. I know that the participation of teachers in the first phase of this project has been able to inform the redevelopment of the books, but is that really and truly participation? What *is* 'real' participation? (journal entry, 20-07-1993)

The crucial importance of teacher participation in the development and trialing of environmental education materials is confirmed through research conducted in Natal from 1986-1990 (O'Donoghue 1990; O'Donoghue and McNaught 1991; Taylor 1995:10). The outcomes of this research supports the voice of these teachers who recognise the value of their participation in the We Care Primary project:

> What I find is [that] finally somebody has come to the teachers and said 'what do you need?' instead of someone else saying: this is what we think you need. Plus we had the chance to narrow the ideas and our plans down so that it is more suitable to us as teachers (I6, pers. comm. 26-09-1994);
>
> ... this project was centred around *our* community, and we could give *our* ideas about what we thought of the activities to make them more relevant (FG9);
>
> ... it is also nice to work on new ideas with others and focus on ideas that we need for our classes (I9, pers. comm. 17-11-1994).

Although teachers strongly supported a process of materials development which involves them as key role players in the process (FG1, FG2, FG3, FG4, FG7, FG8, FG9, FG10, FG11), the tension between participation and available time seemed to be a common concern among teachers (see 3.4.3.1). This tension was to become an important facet of the phase two materials development process (see 5.6).

Participation of teachers in the first phase of this project was focussed on the trialing and testing

of ideas in the We Care Primary pilot booklets. Interaction and discussion around the booklets resulted in sharing of experiences and evaluative discussions on how the materials had been used in the classrooms. The involvement of teachers in the materials development process was, however, limited in scope, as teachers were only requested to work with the materials, adapt, change and provide feedback and suggestions for further development, reflecting a 'technical' approach to action research (Grundy 1982; McTaggart 1991a; see 6.4) and significant correlation with the RDDA model for materials development which I critiqued in Chapter 2. Whilst using the materials stimulated teachers to develop their own worksheets and other classroom materials (FG2, FG3, FG9), they remained separate from the *origination and initial development and conceptualising* phases of the We Care Primary pilot materials. It can therefore not be claimed that the teachers participating in the first phase of the project were full participants responsible for the origination and ongoing development of the materials.

In reflecting critically on the research actions of this phase, it became clear that the distinctions between RDDA and some participant-centred approaches to materials development were not as clear-cut as the theoretical conceptualisation of these models would have us believe. Whilst elements of the RDDA model were evident in the development of a participatory orientation to this phase, the process went beyond that of simply receiving and using teacher information to redevelop the materials, and included critical elements which were guided by an action research orientation.

By withdrawing teachers from their classrooms and schools to teachers centres, and by only arranging two contact sessions with these teachers, the initiative remained separated from the sociological, spatial and historical realities of the school. In addition, the underlying history, ideology, structure and nature of the materials had not been sufficiently questioned by the teachers to make this a socially critical evaluation of the materials. In reflecting on the rationalist elements of the RDDA model which were prominent (to some extent) in the research action, it was clear that although teachers were involved in the research, a limited amount of participation was solicited to provide validity to the participatory claims of the project. The notion of participation and the methodologies employed to create opportunities for participation were largely reminiscent of technicist strategies for change. This phase could then be reviewed as the

combination of an 'expert-centred' approach which includes elements of the RDDA model, and a 'participant-centred approach' which shows concern for the meaning teachers are making from the materials themselves, the process of their involvement and a critique of the sociological, historical and spatial realities of schools and teaching.

In planning phase two of the project, I, together with participating teachers, tried to respond to this tension through developing conditions which enabled more interaction with teachers (see 5.4). This would allow more time for supporting teachers as 'emancipatory action researchers' to reflect on their practice. A process which would involve teachers in the origination and ongoing development (not only trialing) was planned with groups of teachers (see 5.5).

#### 4.3.1.4 The use of the We Care Primary pilot materials

Through the process of trialing the We Care Primary pilot materials, and through an analysis of the workshop data and interviews, triangulated with field notes, my research journal and the questionnaires, a number of uses for the materials were identified. Primarily, teachers were using the materials to support their current planning, or to supplement the work done in the normal course of a school day. Comments on the use of the materials reflected this trend:

> ... it has given me an insight into planning new lessons so that I can incorporate environmental issues into my teaching (E25), ... it supplements what we are doing very well (E30), ... we chose a topic and then looked through for ideas (FG3), ... I chose a section (one book) and worked through it, but found some of the activities too advanced for Sub A, so I had to adapt them (FG4), ... we used it in conjunction with the syllabus (FG10), ... I consulted the package for ideas with regard to our project work (FG7).

This reflects how the We Care Primary pilot materials were being used by teachers as a support for reflection and action to change their daily planning. This enhanced the teachers' capacity to engage with the inclusion of environmental issues in the curriculum (Taylor 1995:6). The ways in which teachers were using the materials reflect an observation by Macdonald (1991:65) that

> ... it is inevitable that teachers will change the materials as a result of their own style, their understanding of the materials, their way of looking at the learner's needs and so on. These are the reasons why it is naive to suppose that change can simply be forced on teachers by means of introducing the right materials.

This pattern of use confirmed the adaptability and flexible nature of the materials. Bearing further witness to that was the wide range of teachers (from different education departments and different school phases; see CR3.9) who had been using the materials. Through ongoing interaction with teachers I was able to establish that the materials had been used successfully with pre-primary groups (W9, FG8). Incidental video material (DF52, DF53, DF54, DF78) confirmed the use of the materials for this age group. Throughout the trialing process, materials had been used successfully by Grade 1, Grade 2 and Standard 1 teachers, with adaptations made by teachers for the different standards (FG1-12, I1-19, DF53). An analysis of the questionnaires (AM10) indicated that teachers in senior primary phases (Std 2, 3 and 4) had also made use of the materials (CR3.9). Further comments from teachers reflect the flexible nature of the materials and the fact that teachers seemed to be making choices about what they were teaching children:

> ... if you were looking for something on a certain subject, you were bound to find it somewhere in the We Care booklets ... (I8, pers. comm. 25-10-1994)

> ... it has everything that I needed - that we needed ... it suited our school, at least our particular school ... although it was done for pre-primary, it suits us up to Sub B ... I found it to be fairly flexible and I've also found the Std 1's change it to suit them. At pre-primary some of them use it exactly, others change it right down ... I gave it to our special class teachers as well ... (I6, pers. comm. 26-09-1994).

Use of the We Care Primary pilot activities in classrooms highlighted practical problems relating to 'hands-on' work with large groups of small children (FG1, FG3, FG7, FG10), reflected by this comment from a teacher: "... our classrooms are too small, numbers are too big, we have limited space for activities" (FG10), indicating a need for classroom support, redress of inequalities and the development of classroom management skills. Some teachers were unfamiliar with the concept of group work, and when confronted with the idea of group work outside of the classroom (in the local environment) seemed threatened and nervous as reflected by this statement: "... but I could never cope with all the children doing those activities outside, they will just go mad ..." (FG3). Situations and perceptions such as these were instrumental in creating situations where the materials were not used, or situations in which only the 'safe' activities for use inside the classrooms were used (FG1, FG3, FG6, FG7, FG9, FG10). Further constraints such as authoritarian principals who did not like the children working out of the

classrooms, were some of the contextual realities which affected the use of the We Care Primary materials in classrooms (FG1, FG2, FG3, FG5, FG10).

The phase one workshops were planned to provide an opportunity for teachers to engage with some of the realities of the environmental crisis and to develop an understanding of environmental education in the junior primary school phase. Identification, discussion and reflection on local environmental issues or topics (see figure 4.1, see also CR4.4) informed the way in which the materials were used as a support for addressing these issues. Through this process teachers were able to identify a weakness in the We Care Primary pilot materials. Many pressing social issues identified by the teachers as being pertinent to the children in their classrooms, were not addressed in the We Care Primary pilot materials. This trend was to be confirmed in phase two, and informed the further development of ongoing materials (see 5.4.5 and CR5.16).

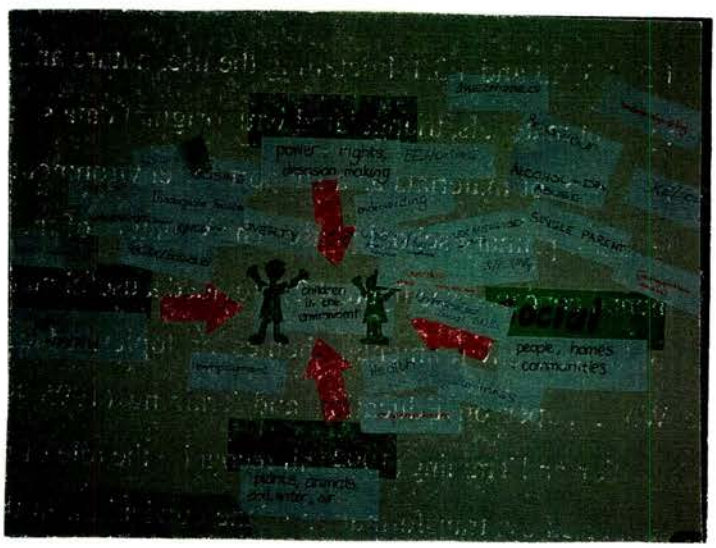



*Figure 4.1* *Photograph showing the brainstorming and identification of local environmental issues during We Care Primary materials development workshops*

Further workshop activities involved the teachers in planning a theme or teaching module using an environmental issue or topic relevant to their particular teaching context as a focus. Through using the We Care pilot materials (and additional resource materials) as a source teachers were encouraged to explore ways in which the materials could support their teaching. (See CR4.5 for an example of a topic plan using the We Care Primary pilot materials and additional materials as supporting resources). Through this process teachers were introduced to some of the possible

ways in which the materials could be used in a flexible and non-prescriptive manner. The need to empower teachers to use materials confidently and flexibly is seen as a condition for using materials which support methodologies which are new and unfamiliar (Macdonald 1991:65; IPI conference, 1 June 1995). Taylor (1995:6) argues that

> ... through the development and use of materials a tangible focus for discussion and activity is provided. This focus is often lacking in workshops, forums and discussions as people try to address pressing environmental and development issues with a maze of verbal rhetoric. Unfortunately up-to-date language alone is of little value without the applied focus that resource materials can reveal about the world around us. A diversity of approaches, both to the development and dissemination of the materials, is therefore very important so that the materials can support a wide range of applications.

#### 4.3.1.5 The relationship between curriculum development and materials development

Reflection on 4.3.1.2, 4.3.1.3 and 4.3.1.4 detailing the use, nature and development process of the We Care Primary pilot materials, triangulated with original data sources, confirmed the role of the We Care Primary pilot materials as a support for environmental education curriculum development in the junior primary school phase. The structure of the materials and the use of seven key environmental concepts (see figure 4.2) provided a useful planning framework, around which teachers could plan environmental themes or topics. Macdonald (1991:57), NEPI (1993:130), the White Paper on Education and Training (1995:99) and the ANC Policy Framework for Education and Training (1994) all recognise the role of resource materials which support, and are supported by, transformation of the curriculum in the junior primary school phase. Macdonald (1991:50) sees a transformed curriculum influencing the development of resource materials for this phase, and states that

> ... the curriculum for the lower primary needs to focus on developing basic process (thinking) skills and concepts through experiential learning, that is, by doing things ... Changing the curriculum in terms of process skills and abilities would lead to richer and more meaningful learning opportunities ... These requirements need to be translated into more effective learning materials which can help learners to develop basic concepts and process skills.

The NEPI documents, the White Paper and the ANC policy framework all allude to the role that materials play in transforming curricula; "... this would be important in transforming the junior primary school curriculum by including more relevant materials and an active learning approach ..." (NEPI 1993:130). These arguments in favour of the role of materials in supporting transformation in junior primary curricula indicate a mutual relationship between materials and curricula, with one informing the other through interaction, development and use in the classroom.

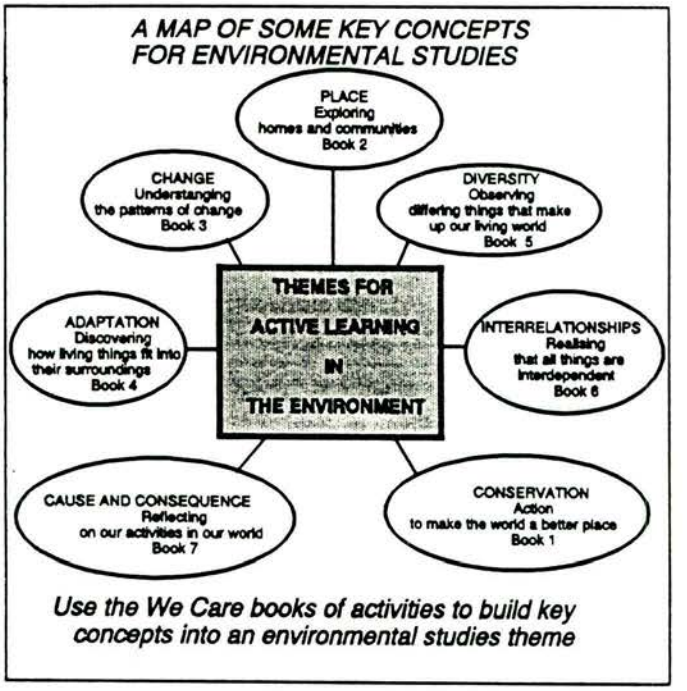



*Figure 4.2* *The seven environmental concepts of the We Care Primary materials used as a framework for curriculum development*

The use of the We Care Primary pilot materials as a supporting resource for curriculum development (CR4.6) is made visible by the statements of these teachers:

> ... well, when we started off planning, we looked at the different concepts, adaptation, change, diversity, etc. and then we sat in groups and worked it out so that we all (Sub A, B and Std 1) worked on adaptation, diversity and interrelationships [see CR4.6]. That was our starting point, even though we did not think we would use that much of the materials, but afterwards, for me in Sub B, it just fell into place, and I could use a lot of the material (I8, pers. comm. 25-10-1994);

> ... I used it as a guideline ... and branched out from there ... we did our initial planning using the We Care Primary concepts ... I've been using 'Change' as my focus and it's

> been wonderful for Sub A; I've been able to plan our whole term and relate everything to it ... (I1, pers. comm. 28-10-1994); and
>
> Yes, 'Place' was wonderful as well. We started off with ourselves and did space and even from space we've been able to relate it to water and air ... so it's all actually part of place ... it gives us direction as well ... it gives you more ideas ... it's a good way of planning (I1, pers. comm. 28-10-1994).

A number of comments reflect how teachers used the We Care Materials to inform their curriculum development (see CR4.6): "... we normally use the We Care books during our planning for all our other projects" (I5, pers. comm. 18-11-1994); "... I like those booklets. I always refer back to them if I'm going to do something... " (I8, pers. comm. 26-09-1994); "... we are planning new schemes, using both the syllabus and the We Care Primary materials ... (FG10)". The use of materials as a support for decentralised curriculum development was to become central to the phase two project activities (see 5.6). Reflecting on receiving a We Care Primary booklet for trialing, one teacher was able to emphasise the role of resource materials in influencing curriculum development by noting:

> If we had it beforehand like this year for next year, we could have covered much more - you could then select from the book. I had to take out things [ideas/activities] and put it with my other things for next year, because it would not have been appropriate to try out all the activities at once (I5, pers. comm. 18-11-1994).

The value of teacher participation in the materials development processes is confirmed by the way in which teacher contributions help to make the materials more relevant and appropriate. This, in turn, influences curriculum development, and use of the ideas in the booklets influence classroom practice. The mutually dependent, interacting nature of curriculum development, materials development and classroom practice helps to create authenticity and relevance in the materials, illuminated by this comment:

> We worked with nearly everything in all the books, you can see teachers have worked on these books, you could say that they are really written for us, because this is what we primarily deal with, is the child's immediate world, their natural surroundings ... the We Care books have been written just for us, it is what we have been busy with the whole time, except that we got more ideas from the books, for instance the formation of rain, experiments with the saucers and things (I5, pers. comm. 18-11-1994).

The materials development process, through a participatory orientation, provided opportunities for teachers not only to trial and test the We Care Primary pilot materials, but also to experiment and use the materials as a stimulant, support and focus for curriculum development. Through this process the curriculum development started to reflect "... what our needs as a community are, rather than focus on a method of teaching ..." (I6, pers. comm. 26-09-1994) and, influenced by the nature of the materials, "... just reminded us to do practical things with the children" (I1, pers. comm. 28-10-1994). This pointed to the potential of the We Care Primary project as a significant role player in curriculum development projects (DF77, DF82, DF83, DF85-DF94, DF118, DF120-134, DF135; see 5.6).

### 4.3.2 Theme two: Environmental education in the junior primary school phase

The reflective discussion presented is intended to highlight those aspects which, through the trialing, testing and redevelopment of the We Care Primary pilot materials and ongoing interaction with teachers in the junior primary phase, helped me to understand the way in which environmental education may best become an integral part of the junior primary curriculum. This included developing a perspective on the difference between environment studies and environmental education, and insight into the way in which teachers were teaching environment studies.

#### 4.3.2.1 Environment studies and environmental education

When planning for the first introductory workshop I was confronted with the dilemma of how to establish the difference between environmental education and environment studies. Being a novice environmental educator at the time, and not having sufficient insight into the differences implicit in socially critical environmental education and environment studies, and as a junior primary teacher who was familiar with environment studies, I was aware of the fact that teachers were going to interpret environmental education as environment studies and *vice versa*. To establish some position on the difference between environmental education and environment studies, I had a number of discussions with people, and consulted some of the available environmental education literature. At the time, it appeared to me that a values and skills

component to environmental education was the differentiating factor (education *for* the environment), whilst environment studies was merely concerned with the knowledge and experiential components (education *about* and *in* the environment) (see 2.2.3). Reflecting on my own experience of teaching environment studies to Grade 1 learners from 1987 - 1990, and an analysis of current environment studies syllabi (DF79) confirmed this perspective. My quest for clarity on the difference between environmental education and environment studies did not end after this analysis, and extracts from my research journal reflect an ongoing search for clarity:

> ... what seemed significant to me is that environmental education is seen as nothing but good education ... (journal entry, 08-12-1991);
>
> ... I feel a need to make contact with people involved in junior primary environment studies to gather information on the relationship between environmental education and environment studies ... he saw environment studies as a subject discipline with an environmental education base ... he also talked about environmental sciences instead of environment studies (journal entry, 30-01-1992);
>
> ... after looking at the principles and nature of environmental education and environment studies, we drew a number of parallels between the two which led to the conclusion that environment studies can successfully be used as a vehicle for environmental education with environmental education being a stimulant for change in formal education. Environmental education, for example, demands a change from teaching methodologies to learning methodologies, top down curriculum and materials development to 'bottom-up' etc. (journal entry, 2-03-1992); and
>
> ... seen from this perspective environmental education is a cross curricular theme which is infused into all subjects, including environment studies ... this project seems to be an improvement on the old style knowledge-based teaching, but I am a little concerned because I feel that the approach is being over structured, and teachers are likely to get lost in the approach, and forget about the real-life education which the children really need ... even an improved approach to teaching will not secure relevant education in context of the child's immediate environment ... I cannot see why environmental education cannot replace environment studies, if it is done through integration of the curriculum (journal entry, 3-03-1992).

This ongoing search for clarity was to continue throughout the project, as I grappled with ideological disputes, modernist strategies of change and the transformative nature of environmental education. The ongoing shaping and clarification of environmental education in the broader national debate had me almost permanently confused and it required constant engagement with literature on diverse theoretical orientations to environmental education within the national and international debates, to understand the emergent, critically responsive and

reflexive nature of environmental education as described in Chapter 2.

However, whilst I was grappling with understanding environmental education, I tried to relate this conceptual exploration to classroom realities and teaching contexts. Through linking with teachers and working with them around their particular concerns (which related mostly to 'doing' environment studies), I endeavoured to gain clarity on how teachers were approaching the teaching of environment studies. Environment studies, as a curriculum area or subject in the junior primary school phase, tended to have a history of marginalisation. Discussions on the reasons for this relayed the contextual realities of junior primary classrooms, as well as the fragmented nature of the curriculum. Further reasons for the neglect of environment studies encompass outdated, racially biased and boring syllabi (DF79), together with the daily pressures of teaching literacy and numeracy. These are reflected by these comments:

> I prefer teaching reading to environment, the syllabus has very old stuff in (FG3), ... it is quite boring to teach about the cow every year (FG6), ... yes, and our syllabus still has the topic of '*bediendes*'[servants] listed in the syllabus (FG11), ... we prefer to do our own planning, then we can do new work which interests the children (FG10), ... there's not enough time (FG2), ... I don't really think many teachers actually teach environment studies for a full hour every week (FG7) ... It seems to be such a add-on (FG3).

> I think it's neglected quite a lot, I think we have so much reading and maths to get through that you steal a bit of time from environment study, instead of doing a whole hour of environment study, you do 15 minutes here and ten minutes there and you don't actually sit down and say, right, now this is my environment study time, and I'm going to do an environment study lesson ... and the syllabus, it is really terrible ... environment should, ideally, be the core of everything else that goes on... but sometimes if you sit with a weak class, like I have this year, you actually have to get down to them and say, listen forget about everything else and just get your writing work done (I6, pers. comm. 26-09-1994).

The largely outdated syllabi, time constraints which are institutionalised through structural functionalist and reductionistic curriculum approaches, together with a history of teacher-dominated, authoritarian and reductionist pedagogies in South African education seem to have affected the teaching of environment studies. After working with the We Care Primary materials for about a year, one teacher reflected on her teaching and noticed a change in her own practice:

> ... for the first time this year I thoroughly enjoyed teaching environment studies, because

> I felt the children taking part in environment studies ... Normally I would have them on the mat, give them the information and I would drag something out of them by asking questions and after ten minutes, they are just not interested anymore. Whereas now, they can really do things, take part. Time for these lessons is usually too short. I think the children have grown. This year I feel I am handing over a fuller child, because they have experienced so many different things, where as before, they have just been stuffed full of information and there you are, now go! Now they are far more capable, rounded off (I8, pers. comm. 25-10-1994).

Further interaction with teachers from different schools revealed three different approaches to the teaching of environment studies in the Western Cape schools (see table 4.1). This situation was created largely through the own affairs division of the apartheid education structures with each individual department being responsible for its own curriculum development.

*Table 4.1* *Different approaches to environment studies in the junior primary school phase (Western Cape, 1992 1993 1994)*

| **Subject approach** | **Thematic approach** | **Conceptual approach** |
|---|---|---|
| * Bound to syllabus topics<br>* Environment study done during set 'periods'<br>* Little or no integration with other subjects<br>* Focus on content<br>* Teacher dominated pedagogy<br>* Little or no classroom support | * Theme chosen as focus for a unit of work<br>* Correlation with other subject areas, e.g. languages, mathematics etc.<br>* Emphasis on knowledge acquisition<br>* Some pupil participation<br>* Gradual development of skills and attitudes (1993/1994)<br>* Curriculum development by teachers (supported through INSET programmes by department) | * Environmental concepts as focus for planning<br>* Includes an emphasis on skills and attitudes<br>* One concept per term<br>* Active participation by the learner<br>* Curriculum development by teachers in collaboration with education department |
| 1992/1993 | 1992/1993 | 1992/1993 |
| ex-DET, CED, HoR | some ex-DET<br>HoR, CED | CED (Northern Suburbs) |

Both the thematic approach and the conceptual approach to environment studies signify a shift in orientation to the traditional way of teaching environment studies in junior primary school

phase (the subject approach). This indicates an attempt to bring about changes in the curriculum, and indicates a dissatisfaction with traditional subject specific teaching. At the time this research project was being developed, many of the ex-HoR (ex-Department of Education and Culture, House of Representatives) teachers, and many of the CED (Cape Education Department) teachers were changing their curricula to become more integrated and were working with a thematic approach. The topics for these themes were chosen from environment studies syllabi, or were chosen randomly by teachers according to the interests of both teachers and pupils. Although the adoption of a thematic approach signified a change in approach to curriculum development, the work being done in classrooms often represented just another version of transmission teaching, albeit centred on a theme (I3, I4, I15, I16). Very little 'real change' (Fullan 1991; Goodman 1995) was taking place.

As a result INSET programmes for teachers (see 5.6) were developed (by the ex-HoR) to enable teachers to engage critically with the assumptions of integrated classroom practice, and to develop ways of integrating not only subject areas (multi-disciplinary theme work), but also integrate the acquisition of knowledge with competencies and process skills such as problem solving, observation, research and others (Baxen and Lotz 1994; DF65, DF69, DF89, DF91; I3, I4 , I5, I16). Very few of the ex-DET (Department of Education and Training) teachers had embarked on thematic teaching, and, in the majority of cases, teachers were teaching environment studies in accordance with the syllabus and curriculum structure requirements of their education department (one hour per week, to be taught as a separate subject in Grade 3/ Standard 1only) (DF79, DF85, DF88, DF118). An interest from teachers (DF79) in changing the structured and 'old' way of teaching environment studies led to the development of the Khayelitsha environmental education pilot INSET project (DF118-135; see 5.6), which has since extended to the Northern Province (DF140).

The conceptual approach to environment studies was, at the time of this research, an experimental initiative which was being piloted by the CED in the Northern Suburbs of Cape Town and in the Wellington area. This approach was modelled on the Scottish curriculum for environment studies, and required teachers to focus their teaching on the development of environmental concepts (see figure 4.2; I7). Teachers were using a concept as their point of

departure for curriculum planning, and were integrating competency development with the development of subject areas such as history, geography, science and health education (W9, W21, I2, I7, I8, DF67, DF72). The advocated approach was to choose one concept per term, and develop the content across a variety of topic areas. However, many of the teachers who had been involved in this curriculum pilot project, preferred to make use of a thematic approach (with a theme or topic as departure point) and integrate conceptual development, competency development and subject specific knowledge into the theme (DF67, DF68, DF72, DF82, DF86, DF87; I1, I2, I8, I9, I10, I12, I14).

These approaches to environmental studies and the dynamics of the changes taking place within these curriculum development initiatives were to have a significant affect on the We Care Primary materials. As noted earlier, the WCEY and thus the We Care Primary pilot materials were modelled on the conceptual approach to environment studies, and reflected a concern for the integration of competency development and process skills. Teachers' experience with working with the conceptual approach, together with the majority of teachers' (not involved with the CED pilot project) lack of experience of working with a conceptual orientation to curriculum planning, was to influence the development of the We Care Primary project packs to adopt a thematic orientation (topic- or issue-based). Grounded in teachers experience of these approaches, the integration of competency development and cross curricular integration of subject areas were to form the key characteristics of the ongoing We Care Primary materials. In this way the We Care Primary pilot materials could be extended in a way which would respond to the changes in the teaching of environment studies.

#### 4.3.2.2 Teachers' concepts of environmental education

Working with teachers on the development of the We Care Primary materials provided opportunities for teachers to reflect on environmental education in the junior primary curriculum. Different perspectives and orientations to environmental education were voiced by teachers in discussions on their perceptions of environmental education:

- Environmental education as a process of 'discovery', 'awareness raising' and

'experimenting' and 'getting to know' the environment (I3, I4, I15, FG1, FG2, FG5, FG11);

- Environmental education as a focus for integration into all aspects of schooling (I3, I5, I14, FG2, FG3, FG4, FG6, FG9, FG10);
- Environmental education which should permeate the school ethos and address local community needs (I2, I6, I10, I12, FG4, FG9).

Other perspectives represented more action-based, socially critical orientations to environmental education. Comments such as "... we place a lot of emphasis on the solving of local problems ... with an emphasis on the local environment ... it should be problem centred as far as possible with an action component ... it includes perspectives on values and attitudes ..." (I7, pers. comm. 11-11-95, translated), "... the children come in and sort out their own recycling material ... children took control of it and put pressure on parents to recycle at home ..." (I2, pers. comm. 29-09-1994), "... I used some of the water activities because we have a river that we have adopted" (I9, pers. comm. 17-11-1994) reflected active involvement and problem solving in local environmental contexts.

The value of active, hands-on learning was confirmed through most of the focus group interviews (FG1-FG10) and workshop evaluation forms (E1-E127). Comments such as "... I think hands-on is really the best. Don't sit back and talk about it ... children need most to be exposed and to have first-hand experience" (I9, pers. comm. 17-11-1994), "... children were more enthusiastic as they had to work outside ..." (FG6), and "... I definitely think they learn more through practical involvement in learning" (I1, pers. comm. 28-10-1994) reflect an increased awareness of the value of active learning in junior primary environmental education.

#### 4.3.2.3 Active learning and the local environment as a resource for learning

Throughout this study I attempted to collect documents, slides and any relevant information on the teaching of environmental education in junior primary schools. I attempted to share this with teachers, when appropriate and, more especially, when teachers were asking questions about some of the aspects of teaching environmental education. On many occasions (FG1, FG3, FG6,

FG7, FG8, FG9, FG10, FG11) teachers requested more information on the processes of active learning, and how best to involve and motivate children to participate in their learning. Some of the more valuable materials I collected was a set of slides from an infant school in Reading, England in 1992 (DF33, DF144). These slides showed how teachers at an infant school had created a rich, diverse and interesting learning environment for their children, and, as a result, had created many opportunities for active learning in the local environment, providing children with the opportunity to understand their environment better, and to act critically and in practical ways to solve issues and problems encountered in the environment in and around the school. As the nature of the We Care Primary pilot materials was focused on the development of pupil participation and active learning in the local environment, these slides were particularly useful for stimulating critical discussion on pedagogical practices, and on the use of the local environment as a resource for learning. To illustrate the value of these slides for stimulating and exploring the possibilities of using the local environment as a resource for active learning, I relay a story of learning from the Coombes County Infant School in table 4.2 and share this comment: "... I was always taken by those slides and that talk. It seems so natural ... I try to use our environment as much as possible, not only nature, but the highway, buildings and whatever is happening to teach the children environmental education" (I9, pers. comm. 17-11-1994).

Whilst classroom observation and the process of active learning at schools have not been a central part of this study, incidental evidence offered by teachers of pupil involvement in the learning process (W2, W4, DF81, DF155) tell some stories of how the We Care Materials have been used to encourage pupil action and involvement in problem solving and understanding of their environment. Some of this feedback is presented as a collection of brief insights into some of the activities-in-use in table 4.3.

Developing active learning pedagogies, through involving children in contextual and local environmental problem solving and an understanding of the interrelationships between humans and their environment, may well help teachers to develop the practice of 'action competence' (Uzzell 1994:2) in environmental education which "... should provide the necessary conditions for children to become catalysts of environmental change".

*Table 4.2 An active learning story*

**Sunflowers**

I had read of the interactive teaching and learning taking place at Coombes County Infant school through Learning Through Landscapes Project information, and was curious to visit and see what was happening there. Upon arrival I was met by the head teacher who introduced me to Jason, a 5-year-old, who was to take me on a guided tour of their school grounds.

We set out, hand in hand, to explore what looked like a fascinating playground. As we were walking toward what was left of the sunflower patch, with a few extremely tall sunflowers still facing the sun, we encountered a fallen flower on the tarred pathway. Jason immediately left me, rushed to pick the sunflower up and carefully placed it back under the growing sunflowers. He then proceeded to explain very earnestly that the sunflower would not have been able to become compost if it was not on some ground. We continued our tour of the school grounds and I was shown the wild garden, the smelly garden, the sheep pens, the maze, the three ponds, the tunnel, the recycling area, the indigenous wood and the painted playground with great enthusiasm. I was intrigued to see a number of teacher/pupil groups busy in different areas, obviously busy using the local environment as a resource for learning.

I was then treated to a slide show, which was a revision lesson of the previous week's learning captured on film. I was taken through the sunflower learning experience which involved preparing the sunflower patch from vegetable peelings and autumn leaves, planting the seeds (kept from last year's harvest) and watching and monitoring their growth. The activities of the past week were focussed on the sunflower harvest and showed how the sunflowers were used for counting and measuring. A further activity showed the children crushing seeds for oil and for baking. All leaf litter was placed back beneath the left over sunflowers. The sunflower activities included a critical discussion on the economic implications of the European markets on sunflower seed production (in the news at the time).

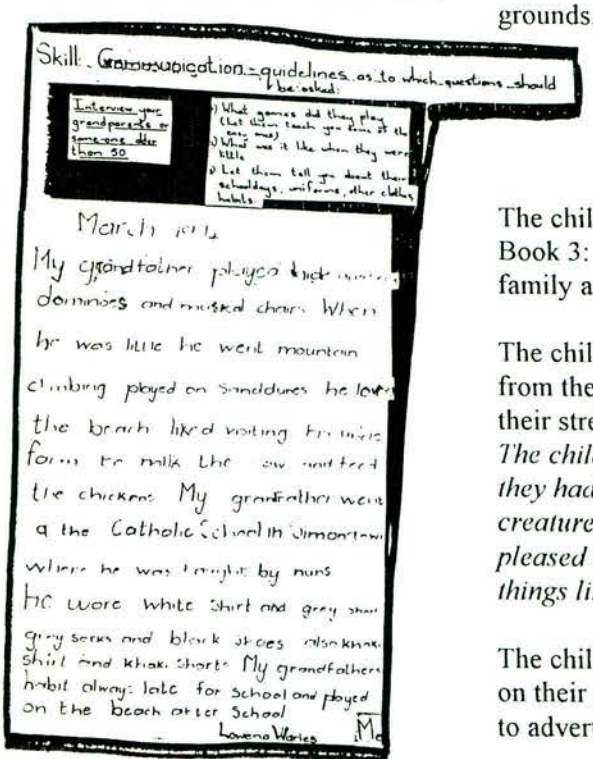
What I was witnessing was evidence of a integrated learning in practice, where little children were learning basic ecological, economic and social principles through ongoing active involvement in and interaction with the environment around them.

*Table 4.3* *Using the We Care Primary materials: some stories of active learning and pupil participation*

The children at Rondebosch Boys' Primary used the 'Litter Monster' activity from Book 1: *Conservation* to build litter monsters and to do a litter clean-up.

The children at Sivile Primary used 'The Wood or the Trees' activity from Book 1: *Conservation* to discover the value of wood at school and at home.

The children at Rhenish Primary used the 'Plant Diversity' activity from Book 5: *Diversity* to learn about the diversity of plant life in their school grounds.


Skill: Communication - guidelines as to which questions should be asked:

Interview your grandparents or someone older than 30

1) What games did they play (Let them teach you some of the games now)
2) What was it like when they were kids
3) Let them tell you about their schooldays, uniforms, other clothes, hobbies

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My grandfather played ... dominoes and musical chairs. When he was little he went mountain climbing played on sanddunes he loved the beach liked visiting his uncle's farm. He milk the cow and fed the chickens. My grandfather went to the Catholic School in Simonstown where he was taught by nuns. He wore white shirt and grey short grey socks and black shoes also khaki shirt and khaki shorts. My grandfathers habit always late for school and played on the beach after school.

Lovena Wailes

The children at Sun Valley used the activity from Book 3: *Change* to learn about the history of their family and the history of their local environment.

The children at Matroosfontein used an activity from the draft "Our Street" project pack to explore their street for signs of life. Their teacher reports *The children were fascinated with the fact that they had to put plastics outside and see what creatures they get in the sand. The children were pleased because they could go out and experience things like that (15, pers comm. 18-11-1994)*

The children at Valley Pre-Primary made a video on their recycling project. They now use the video to advertise their school (DF78).

A focus on learning opportunities in the local environment created a significant focus for the phase two materials development process (see 5.5). The value of using the local environment as a resource was confirmed by teachers through statements such as "... activities were at hand and did not need much finance, so pupils could participate without any problems ..." (FG1), "... it was practical, realistic ..."(FG7). Seen in the light of the under-resourced nature of most schools and the fact that children can often not be taken 'out' into the environment on excursions, this aspect was to become a significant motivating factor for the further development of materials which would not require technical or expensive material or equipment, and which could be used in or around the school area (see 5.5 and Appendix 4).

### 4.3.3 Theme three: The teaching and learning context in junior primary

#### 4.3.3.1 Teaching and the teaching environment

Teachers of junior primary classes are faced daily with a myriad of issues and contextual realities, many of which have been alluded to through the above discussions. The broad contextual review of junior primary education in South Africa (see 2.4) illuminated the general status of the pedagogical climate in this school phase, and outlined many of the challenges facing teachers and other educators working in this school phase. Significant for materials development and the use of materials is the way in which contextual constraints, possibilities and realities differ from school to school, classroom to classroom, thereby challenging the notion of 'teacher-proof materials' (Kirk 1990, see 2.3.2) which are assumed to bring about change in all contexts. A teacher comments "... I also find in this school or in different schools, you have different things that are lacking ... which makes it difficult to use the books" (I6, pers. comm. 26-09-1994).

Within schools conditions change from year to year, also influencing the type of materials used, how materials are used, when they can be used, and the types of materials which teachers need:

> ... but this year the class has been different ... every year the children change ... last year we could do it, this year we definitely couldn't ... you just actually can't do group work with my class, you can't allow them to do it ... you can't let them do research work, they

> don't know how to work together ... they don't even know how to communicate ... (I6, pers. comm. 26-09-1994).

These brief reflections on the micro-context of junior primary classrooms are offered here to reveal the relationship between materials and the context in which they are used, and how the contextual realities of teaching may influence the types of materials developed. One of the most pressing problems which continues to provide a significant challenge to all educators, teachers, materials developers and communities in South Africa is reflected by this comment "... well, the problem is the big class" (W12).

#### 4.3.3.2 Learning and the learner's environment

Hartshorne (in McGregor, 1992:8) sees education as a process which should aim to "... teach children to think creatively, to apply their knowledge to the solving of problems, to work well together, to use their own initiative and to be adaptable". However, the social milieu and socio-economic environment in which children learn, often affects their learning. Access to facilities, literature and other resources for learning also have an effect on determining the quality of the educational experience, reflected by these comments:

> Sometimes we go to one of the people in the neighbourhood, but we do not have the opportunity to take the children on nature trips, so they are limited to their surroundings. They have, for example never seen a river flowing. They have no first-hand experience, and must imagine it for themselves! (I5, pers comm. 18-11-1994).

> Another thing that was really interesting was the worksheet, because they had to go with their parents and work with them at home and you could see why the children give you the wrong answers. There were misconceptions about the questions, and this was an easy worksheet. I translated it into Afrikaans and still, if you ask for the street address, children brought me other things. You can see the parents do not give attention to what the children read, that is why we have problems with the children (I5, pers. comm. 18-11-1994).

> ... if we can find some way to get through to the parents, to involve the parents ... we actually have to sort of indirectly try to educate the parents (I6, pers. comm. 26-09-1994; see 5.5).

Any new curricula or curriculum materials never come into a vacuum in schools, but become

part of an existing teaching and learning culture. The environment into which a large number of South African children are born is characterised by poverty, malnutrition and inferior opportunities for formal education. As a result many of these children suffer delayed development and poor scholastic progress. Flanagan (1994:56) notes the important role which teacher education, combined with good quality resource materials, play in impoverished learning environments:

> For many rural children the teacher is the only significant adult as far as literacy is concerned, so it becomes crucially important that they are capable of being effective. Productive learning requires the combination of an informed teacher, an appropriate text/resource and a willing learner. The absence of any one of these three causes a breakdown in the pedagogical relationship.

#### 4.3.3.3 Change in junior primary classrooms

A preoccupation with change and transformation in this project has been repeatedly highlighted throughout the descriptions of the project activities. As noted by Fullan (1993:21), change is not a blueprint but a process (see 5.7). Illuminating the tensions between 'success stories' and constraints in this research project, Janse van Rensburg (1995:144), citing the work of Popkewitz (1991) notes:

> He (Popkewitz) also notes that change should not be viewed as a 'single monolithic entity'(1991:29). The patterns in which educational change occur appear to be 'plural and unstable', characterised by various interacting layers of institutional conduct which involves contradictions, tensions and conflicts. Like fibres in a thread, practices and discourses overlap or discontinue.

Flanagan (1994:56) notes that if a more literate (and a more environmentally literate) community is desired, then the conditions for teachers to learn productively will have to be created. She argues that the present teachers are entrenched in habits and rituals which will be difficult to change, and contends that teachers will have to unlearn, relearn and learn further if they are to translate the educational change and transformation rhetoric of past years into practice. Changes which reflect a concern with process oriented teaching with an emphasis on learner competencies (process skills) and problem solving abilities (CR4.7; CR5.29) are reflected through some of the teachers' experiences with the We Care Primary materials:

> That is one of the things that I want to comment on. The recording skills, the children have never taken note of what is going on around them and when we did this clean up campaign (just on the pavement), they could select different kinds of rubble. They were more aware of bottle tops and sucker sticks, and had to count them and write them down. If we didn't focus them on recording the rubble, they would just have thought it was another activity and they wouldn't have learned how to record the sucker sticks and bottle tops and tell that they are not part of the natural environment (I5, pers. comm. 18-11-1994);

> What is valuable for us is that the children's cognitive skills are developed, in comparison with what we had - only knowledge or content - it is much better. We now give them opportunity to think. The homework that they get is to bring something: fruit, vegetables, experiments with snails - how far it moves, measure the snail track, learning of the measurements and what is centimetres, which track is longer and which is shorter, etc. We also use our mystery bag, where they have to identify something while they are blindfolded to develop their prediction skills (I5, pers. comm. 18-11-1994).

Reflecting on the value of these changes in teaching practice, teachers' comments reflect increased quality in the learning experience:

> They tend to internalise things much better if they've actually had a hands-on experience and they're working through a problem - it seems to stay with them longer than if you're just giving them all the information (I6, pers. comm. 18-10-1994);

> I think the pupil involvement which this resource suggests is great. The children are enriched through their experiences. In that way it works well ... The weather station activities were a hit with my children. I could spend the whole term with that. They were enthusiastic about going out. They felt they were doing things practically. They also enjoyed the insect activities. They had to shake a bush carefully and see what fell out, etc. That practical part of the We Care they enjoyed very much ... We really enjoyed it ... lots of participation in the groups (I8, pers. comm. 25-10-1994).

> you can rely on them far more. You have extended them far more so now they can go on and pick up and carry on, where before you had to push. I also find them more relaxed. I feel more relaxed, because first I was very afraid of noise in my class, now I feel let them break down the place, because they are constructively busy. I am not as aware of noise in certain times. I am still strict with discipline in certain classes, types of lessons, but where they have to work together on the same subject, where they have to groan and talk about things, I let them be (I8, pers. comm. 25-10-1994).

In reflecting on the way in which their teaching practice has changed, teachers note that the process of participating in the We Care Primary materials development project has affected the

way in which they think about environmental education. Many teachers reported an increased awareness of local environmental issues, and an increased inclusion of environmental education in their lesson planning (FG1-FG11 and I1, I2, I5, I6, I8, I10, I11, I12, I14). The use of, and interaction with, the process oriented activities in the We Care Primary materials also stimulated teachers to think about the ways in which environmental education and environment studies is taught in classrooms. An extract from a teacher interview reflects how experience with the We Care Primary materials created situations in which teachers were involved in critically reflecting on their practice:

> I did quite a lot of work on that, I mean, two weeks we spent on that topic and strange enough, what the children had heard when it actually came to questioning (the give-and-take) they didn't take in all that much. It surprised me, because there was a tremendous amount of input there. I suppose it was because it was so much information (I11, pers. comm. 26-10-1994).

These extracts from interview and workshop data represent some examples of changes reported during feedback sessions and follow up workshops with individual teachers, or with small groups of teachers. These accounts together with table 4.3 and incidental video data (DF53, DF78) offer examples of catalytic validity in the project, and testify to the potential of the We Care Primary materials development project to initiate processes of change through teacher participation and critical reflection on the use and development of materials and on their classroom practice.

### 4.3.4 Theme four: Teacher participation in the We Care Primary materials development project

In pointing toward the reflective descriptions of this chapter, the closing paragraph of Chapter 3 metaphorically alluded to a central theme for this thesis. Teacher participation in this materials development project has been justified through a socio-historical location of the research question and through the choice of socially critical environmental education as an orienting framework for the research process. The illumination of aspects pertaining to the central theme of teacher participation have been highlighted throughout this report. In Chapter 2 I described the shifts in environmental education towards participatory orientations to materials

development and highlighted the support for participation and democratisation of curriculum and materials development processes from the broader educational context. In Chapter 3 I highlighted emancipatory action research as an appropriate methodology for participatory research in a context concerned with change and transformation. Chapter 3 also described the development of a participatory orientation to the trialing of the We Care Primary pilot materials, and highlighted some of the issues and complexities of this process, creating a thread that was to weave through the reflective discussions in this chapter. The description in Chapter 3 made visible the need for:

- Sustained, ongoing participation in which relationships of trust could be established;
- Closer interaction between teachers, resulting from a history of separation between teachers and a curiosity and eagerness to meet with each other and work together around common issues and concerns;
- Responsive workshops planned with teachers at their schools, which could challenge pre-determined, structured and 'engineering' workshops at centres 'away' from their schools; and
- Consideration of the implications of situational constraints and contextual issues on participation.

Further reflective descriptions in this chapter have highlighted additional insights and emergent perspectives on aspects pertaining to teacher participation in materials development initiatives:

- The value of teacher participation in informing further development of the materials, and the ways in which they may be used in classrooms;
- Teachers' interest in participatory orientations to change, within the realities of their situational constraints;
- That it is the quality of the interaction and participation in materials development which enables change, not the materials themselves, making participation in innovative and change-oriented materials development projects a central feature;
- The importance of involving teachers from the initial stages of participatory materials development processes to avoid 'rubber-stamping' of materials through pseudo-

participation once the materials are already developed, which merely represents an adaptation of RDDA materials development strategies;

- The mutually supportive relationship between curriculum development, materials development, curriculum development INSET and classroom practice in educational transformation processes; and
- Teacher participation enables reflection on, and the development of relevancy in, materials, as they are more familiar with the ways in which the contextual realities of teaching and learning environments affect the use and nature of educational materials and the quality of children's learning experiences.

Aspects of the central theme of this thesis (teacher participation in materials development) is thus gradually being woven together through a number of threads and insights, gained through data analysis, critical discussions and interpretation, supplemented by insights gained from contemporary educational literature. The aspects highlighted above all seem to be pointing towards the need to establish conditions which enable ongoing, authentic teacher participation in materials development processes. This theme is carried forward in this section and in phase two (see 5.4) through further reflective discussions.

#### 4.3.4.1 The development of teacher voice through participatory orientations to materials development

Through the use of extracts from interview transcripts, video material, workshop data, research journal and field notes, I have tried to create a voice (see 1.3.3 and 6.4) for the teachers who have been so central to this research project. Participation in an INSET Policy Initiative (IPI) workshop in 1992 highlighted that materials development projects should work collaboratively with teachers to address *their* needs, not the needs of the project. An extract from my research journal captures this concern for teacher voice in participatory projects:

> ... I enjoyed the workshop at Uluntu today. It was interesting meeting with other organisations working in materials development, although the projects are all in different subject areas. What was most valuable was the way in which the evaluation panel emphasised that teacher voice should be central to projects, and that projects should not be 'driven' by the agenda of the project developer, but rather the needs of the teachers.

> To ensure authenticity, ongoing evaluation should be developed within the project, and the criteria for evaluation should be determined by the teachers involved in the process. The evaluation panel identified a weakness in our projects to be a lack of visible evaluation by teachers. They also emphasised that teachers should be taken seriously in this process, and their voices should be heard asking (not the NGO voices telling or predicting). Teachers should also begin to demand quality service from support organisations and should begin to demand closer co-operation between INSET projects (journal entry, 24-03-1992, see CR4.8).

Diamond (1993:513) reflects on the absence of teacher voice in research projects by noting: "In many teacher education programmes, the existence and legitimacy of teachers' individual words and knowledge seem rarely to be acknowledged." Day, Pope and Denicolo (1990, cited in Diamond 1993:511) argue for greater efforts to refigure teacher education and research so that teaching lives can be represented in authentic ways and that research can become concerned "with the nature, formation and use of teachers' knowledge". Teacher voice should therefore be a central concern in developing resource materials, if the materials are to be authentic, and representative of the teaching world and appropriate for use within that world. The extensive nature of the participation in this project has not enabled this research to do justice to the diverse, rich interactions and discussions which occurred as a result of teachers working together around a concern for better quality educational materials (see 6.4). However, I have tried, through the structure and discursive nature of this report, to make known the existence and legitimacy of teachers' words and knowledge, by representing extracts of teacher text and 'lived experience' which I have interwoven with extracts from supporting literature and with my reflections on the process.

#### 4.3.4.2 Workshops, support and the provision of in-service training: some shifting orientations

Using workshops as a way of creating opportunities for teachers to work together around the development of environmental education materials provided access to teachers who were interested in participating in a project of this nature. Reflecting on the process followed in phase one of the project and the ways in which I led some of the workshops (see 3.4.2.2) highlighted the value of developing materials with a "... broad, responsive orientation" (Taylor 1995:7), rather than a technicist, managerial orientation. A responsive orientation enables a shift from

more prescriptive and structured workshops to situations which enable authentic participation. Situations which enable teachers to identify their own problems, and select their own topics or issues for discussion and reflection with others on their classroom practice (and the use of the materials), are more likely to be situations in which authentic participation may occur. The function of the workshop thus changes from providing knowledge, techniques and opportunities for interaction with others, to being a supportive event, or series of events, which responds authentically and collaboratively to teachers in real life situations.

During phase one I encountered many teachers who were wanting support for changes in their classroom practice. The importance of support for teachers wanting to change their own or their school's practice in any meaningful way, is highlighted by many projects and authors involved in the provision of INSET (Davidoff *et al.* 1993; Flanagan (ed) 1991; Goodman 1994; Robinson 1994). As this phase of my research progressed, and through many discussions with teachers on issues of change and support (FG1-12, DF20, DF30), it became apparent that INSET was generally experienced by teachers as an ad-hoc, un-coordinated part of teaching. Teachers were involved in attending a diversity of 'courses' and 'programmes', some of which were contradictory and often varied in quality, creating more confusion than consistent value for teachers (IPI workshop, 25-03-1992; DF20, DF30).

Through this phase it became obvious that support for transformation should be sustained in ways which went beyond 'courses' or 'programmes' (Davidoff 1993; Hofmeyr and Jaff 1992; King and Van den Berg 1994; Robinson 1994; Robinson and Versfeld 1994). Many organisations involved in INSET provision are exploring strategies which strive to "... sustain the carryover of course learning into practice" (Robinson 1994:1). Arguments for whole school and school-based INSET are being advocated as possible conditions for meaningful transformation (Davidoff 1993; Schofield 1994). Davidoff, in her thesis on action research work in the Western Cape, comments as follows:

> ... an understanding of the change process suggests that real change is far more likely to occur when the context in which teachers are working is taken into account, and when teachers themselves are actively involved in the change process ... from this perspective it would make sense to do INSET work [which includes materials development] with teachers at their schools and in their classrooms (Davidoff 1993:7, cited in King and Van

den Berg 1991:48)

The value of school-based workshops is underscored by these perspectives and the shift in orientation to workshops. In this way, the workshops become more valuable to teachers in classrooms, and to schools grappling with common problems. The immensity of the contextual realities and challenges influencing the provision of INSET and participatory materials development projects in South African schools is documented by many authors working in the field of educational transformation (Davidoff *et al.* 1993; Hofmeyr and Jaff 1992; Kromberg 1993; Robinson 1992, 1993, 1994). For participatory materials development projects to become *an ongoing process* which enables longer term, more meaningful participation by teachers, concern for the discussions and contextual realities around the provision of INSET is vital (see 5.6.4). The comments of a teacher reflect the nature of ongoing, more responsive workshops which resulted from ongoing interaction with a particular school (S7) over a period of a year:

> You coming here? Yes, that started us off. The brainstorming of all the ideas. You became our thread. We think of you being here. We know we can phone you ... and also because you befriended us and you never gave us the answer, you let us find our own way, that kind of trust is important (I8, pers. comm. 25-10-1994).

The value of school-based participatory materials development in building collegiality and teacher support groups which can boost morale and provide a forum where teachers can share their skills and ideas is underscored by these comments: "We sat in groups and worked it out so that we all worked on the concepts ... and helped each other ..." (I8, pers. comm. 25-10-1994) and "we talk together about it, how, what and why we are doing things" (FG6). These comments indicate that school-based co-operation and working together are also important facets of ongoing participation. The development of such support groups are, however, not always possible or practicable in all schools and the comments of a teacher reflect some of the constraints: "We have been stressed all year ... it has been very difficult because we never seem to find the time ... and our head of department is never really there for us ... she prefers to always do her own thing" (I12, pers. comm. 01-11-1994).

The INSET Policy Initiative has argued in its policy proposals (Robinson and Versfeld 1994:11) that teachers can be key providers of INSET for one another:

> Teachers themselves are key INSET providers and must be perceived as such. The notion of teachers working with teachers needs to be nurtured and recognised as significant INSET.

Working with the teachers involved in the CED environment studies INSET project (W4, W17, FG3) illustrated the value of teachers being key role players in the provision of INSET (CR4.9). Robinson (1994:19) supports the principle of teachers providing INSET to each other, on the basis that "... teachers share similar experiences and can build towards common understandings of good education". The positive experience of teachers enthusing and supporting one another, as cited above, would also seem to support this. She argues that teachers providing INSET become potentially powerful 'change agents' within their schools and between schools. An extract from my research journal provides further insight into the value of working with teachers who are involved in INSET provision in a materials development project:

> The teachers recognised and discussed the value of ongoing support, sharing and INSET as they had experienced it throughout their curriculum development project ... they thought that resource development could only be successful through interaction with other teachers ... they raised the practical constraints of such interaction surrounding the lack of time allocated to INSET ... they were adamant that resource materials with a new orientation would not be successful in isolation and would be seen by teachers as 'just another resource', not necessarily relevant to their context, area and needs, and so would not necessarily ensure a change in the approaches to theme work or teaching practice. They were pleased with the books and asked whether there were any copies of the We Care Primary pilot materials for the extension of their project. They wanted to use the materials as a supporting resource for new participants in the project (journal entry, 18-05-1992).

The We Care Primary pilot materials seemed to be considered a valuable support for INSET as they provided 'capital' which could be used when working with other teachers. This is reflected in a comment which mirrors a feeling of empowerment on the part of a group of teachers: "We have a good idea of how to work with these new ideas and methods. These books are very helpful ... we can use them to help other teachers in a workshop" (I11, pers. comm. 26-10-1994).

#### 4.3.4.3 Ongoing support and participation

On reflecting on the nature of the project activities and the use of the materials, teachers

expressed a concern that the project would come to an end. Repeated enquiries as to when the new materials would be available, and a concern for ongoing interaction with other teachers, gave impetus for further consideration of how the project would proceed. Lessons learned from phase one research activities indicated a need to establish conditions which would enable more sustained, school-based interaction, the development of more resources which would be focussed on local environmental issues or themes, and teacher involvement in the conceptualisation and origination of materials as part of the development process. Support from teachers for an ongoing project was reflected in statements such as:

> We can certainly have more workshops while we are finding our feet ... if we could maybe workshop it through twice a year ... I think it's very much working through new things and sort of finding oh, we're coming unstuck here, we need to work through this or that ... and realising that we cannot miraculously produce a new way of teaching ... that's when we need support from you (I1, pers. comm. 28-09-1994).

> Yes, I think INSET should accompany materials development. There cannot be too many people out there who are able to support and develop teachers (I7, pers. comm. (translated) 11-11-1994)

> Let this be an ongoing experience ... (E12), ... if possible, have more of these workshops to keep teachers meeting together, and to develop ideas and some activities so we can do new ideas in our classrooms ... (E18), ... I would like to participate in any future project activities ... (E60), ... I would appreciate being kept up to date with project developments ... (E73), ... the project needs to go on so that it can support other teachers ... (E89), ... could we work through a theme at some further workshops ... (E86), more help please for the other teachers in my school ... (E67).

In responding to a general consensus from the teachers that the We Care Primary materials development project should be ongoing, an infrastructure needed to be created which could sustain the development of the project. The Centre for Educational Development at Stellenbosch University (CENEDUS) was approached (journal entry, 27-07-1992) with a request to fund and establish an appropriate infrastructure for the project. Key aims of the infrastructure would be to create a support network for teachers in the Western Cape who had been working with the We Care Primary pilot materials. In addition the process of ongoing, sustained materials development projects for environmental education in the junior primary school phase would continue and be extended. Linking with education departments and colleges was to be a further

function of the infrastructure. A preliminary project proposal was drawn up, and was handed over to CENEDUS (DF135, AM35). Further negotiations (in my absence) resulted in the establishment of the Environmental Education Programme at Stellenbosch University (AM35), a programme which was to provide the 'home' of the We Care Primary project and other school-based environmental education development projects (CR4.10).

### 4.3.5 Theme five: Doing emancipatory action research

Hart, (1993:109) notes that "... we need to search for *deeper meaning* and how it emerges from our encounters with complex systems and at the same time be self reflective about our research purposes *and* methods". This chapter illuminates some of the complexities and problems apparent in the education system in a period of transition and transformation and some of the complexities of engaging with the ideals and assumptions of emancipatory action research and socially critical environmental education in this context. This research project set out to investigate ways in which teachers could develop skills, and research and grapple with the problems inherent in the development of materials for junior primary environmental education. Through this process teachers were to be encouraged to become reflective practitioners and, through this, change their teaching. The research design was exploratory and open-ended, and developed around ongoing materials development action, literature reviews, reflective deliberation, consultation and dialogue. It involved cycles of planning, action and reflection, which were often experienced as 'cycles within cycles', highlighting the complexities of doing action research (see 6.5.1). McTaggart (1991a:2) cautions that, given the complexity of real social situations (reflected in this chapter), in practice it is never possible to experience action research as neat, controlled or contained cycles of planning, action and reflection.

The mapping of phase one of the project reveals some of the complexities of 'doing' action research. These are reflected in diverse problems and tensions enacted through the research activities. One such problem was the size of the participating group, which was influenced by the fact that the research started with the trialing of over 300 booklets in the Western Cape. The logistics of establishing and maintaining contact with the teachers gave rise to the situation where teachers were 'withdrawn' from schools and classrooms in large numbers to 'participate'

in the research process, making ongoing support for sustained reflection-in-action on the materials unlikely. A further complexity was revealed in the practical realisation that intentions to change and transform classrooms, schools, societies, teachers or materials do not in themselves bring about change. Even preliminary actions directed at change and empowerment do not necessarily result in any change or empowerment, making the ideals of emancipatory action research and socially critical environmental education difficult to implement in real life situations (see 6.4).

This situation was to reveal that "... action research involves an inexhaustible variety of settings and an endless range of situational contingencies for which ready made recipes do not exist" (Wagner 1993:5). Viewing the themes described in this chapter as sites of change or areas for further inquiry provided focus for ongoing research and reflection-in-action into a diversity of aspects pertaining to the research question, thus reflecting the existence of multiple cycles of inquiry within the broader inquiry process (see 6.5.1), making the research process a lot more complex than the theoretical models would have us believe. The description of these themes, identified through an interaction and triangulation of multiple data sources, reflects a process of meaning making from the research activities which have taken place in diverse settings and which have been shaped by many situational contingencies. Punch (1986:26) recognises how the situational contingencies and diverse settings affect the conduct of the researcher and the outcomes of the research by noting that both are "... vulnerable to unique developments in the field and to dramatic predicaments that can only be solved *situationally*". Phase two documents how I attempted to respond to these situational problems and some of the contextual constraints which were made visible in phase one. In this research project action research therefore constitutes an exploration into unexplored territory: into a process of learning how to do participatory action research in educational settings. Wagner (1993:5) argues that a crucial part of such an exploration involves analytical and critical reflection on the moral and political dilemmas of the actions, and a self-reflexive analysis of the moral, ethical and political role of the researcher in this process.

#### 4.3.5.1 Issues and dilemmas of role definition for the researcher in emancipatory action research

Participatory action research and socially critical environmental education are both concerned with changing situations, not just interpreting them. This has significant implications for researchers wanting to participate in processes of research which are both transformatory and emancipatory. McTaggart (1991b:181) describes participatory action research as a "... systematically evolving, living process changing both the researcher and the situations in which he or she acts ... Participatory action research [thus] also concerns the subject (the researcher) himself or herself".

Ely (CARN conference, Worcester (UK) 11-13 September 1992) recommends that in reporting action research we should mirror our humanity, face it and reflect and share our stances and processes of learning. Reflecting on my role within the research process, I confess to ongoing confusion coupled to an ongoing struggle to determine exactly what my role and function could and/or should be in the research process. Some journal entries shed light on this dilemma and on some of my attempts at progressive focussing on the issue of facilitation and role definition which I have experienced throughout the four-year research project (see 6.4):

> I have been grappling with my role in this research process again. Today's workshop was another one of those in which I had to 'teach' more than I could 'talk'. Sometimes it is really hard to be 'participatory' and 'facilitative', especially when the groups one works with are as silent and reserved as the group I had today. I think it has something to do with the teachers' habit of expecting to listen when in a workshop or lecture environment. I must admit, when I was a teacher, I was always glad (albeit bored) to sit back and listen to someone else after a long day's work. However, I know that working together is a much more productive process and I enjoy working *with* the teachers much more. They are always much more enthusiastic too. I found it really hard to keep the action going in today's workshop, and when I resort to 'teaching' I feel guilty, because I know that this is not how it is supposed to be done if you are busy with emancipatory action research, however, sometimes I would like to invite the guys that write all that stuff to help me deal with situations like the one I experienced today! I still don't know what to call myself. Sometimes I am a 'teacher' in the most traditional sense of the word, and sometimes I am a great facilitator, and most of the workshop action comes from the teachers. I will keep on reflecting on this, maybe I will reach some clarity at a later stage! (journal entry, 25-04-1993).

> It seems that other participant researchers have been struggling with similar dilemmas. I have just read a great piece on the researcher's position in research. What was meaningful to me was Weinstein's recognition that participatory research is fraught with uncertainty and self doubt or even ongoing discomfort. I can certainly identify with that. I never know when I am doing things the 'right' way. She also talks about the researcher being an instrument, and notes that the researcher is vulnerable to change and she says we should pay attention to not only our own role in the research, but also to the way in which the research process affects us, and helps us to change (journal entry, 30-07-1993, referring to the work of Weinstein-Shr 1990).

> I have been feeling uncertain about my position in the research process again, but I am now beginning to realise that this is not such a bad thing as it spurs me on to further inquiry, and I think being uncertain about my role, about the influence my power (implicit) and my struggle to 'let go' in workshop situations, has driven me to inquire into the complexities of doing action research with others. It has made me become self-reflexive about what I do and how I do things in the research situation. I must confess that I still cannot fathom what it actually means to emancipate a teacher. About the closest I can get to a workable concept of emancipating a teacher is to create opportunities and help to guide reflections about change in practice, but I can't fathom what role that puts me in (teacher, powerful one or neutral facilitator?). Maybe I am still 'social engineering'? (journal entry 30-05-1994).

These extracts and my ongoing experience of conflicting assumptions, ideals and praxis of my role in the research process (especially those of educator, investigator, and emancipator) are reflected in the writings of many participant researchers. Weinstein-Shr (1990), in reflecting on conflicting roles of educator and investigator in the research process, notes that:

> In my experience these roles can be complementary and mutually informing, but at other times there is also danger that one endeavour can raise serious doubts about the other. By exploring my own shifts in perspective as relationships were negotiated and discoveries were made, I will suggest that self doubt characterises not only the research process, but also the lasting consequences of inquiry. I will argue that this constitutes not only the risk, but also the power of the [research] enterprise.

Wagner (1993:6) emphasises the complex role of the researcher when he notes:

> Participant researchers and field researchers working within the tradition of 'emancipatory research' which seeks to diminish differences between researchers and subjects (i.e. in terms of institutional authority and the culture of expertise), and to bridge knowledge and action, or understanding and application, face the intellectual challenges of understanding contrasting role expectations and contingencies.

Wagner (1993:5) extends this argument further by noting that these intellectual challenges can stimulate the reformulation of work routines and expectations within the group they are investigating and working with. Phase two details how my role continued to change in the research project as I attempted to redress power imbalances in the research relationships through creating the conditions for authentic participation and open dialogue, encounter and reflection which would (or could) make the research "... a reciprocally educative process" (Bozalek and Sunde 1993/4:75). Chapter 6 provides a reflective discussion on the dilemmas of doing emancipatory action research in a South African context, and provides further insight into my role in the research process. Wagner (1993:5) further outlines the challenges (and value) of being a participant in research processes by noting that, in conjunction with the ongoing reformulation of their roles, participant researchers have opportunities to develop a form of knowledge that differs from that developed by non-participant researchers. He notes:

> One such discriminating quality is the attention to interacting effects ... between action, inquiry, and understanding in the context of a particular school or programme. Another is the attention participant researchers give to concepts that connect these particular effects to more general patterns of interaction among research, theory, and practice in education.

The ongoing struggle with the definition and praxis of my role in the research situation has thus not only illuminated yet another complexity of doing emancipatory research, but has contributed significantly to the reflexive and ongoing nature of this research project, an aspect which has had lasting effects on not only the research project, but the We Care Primary materials.

## 4.4 IMPLICATIONS FOR THE REDEVELOPMENT OF THE WE CARE PRIMARY PILOT MATERIALS

A discussion of the major themes emerging from the data and research process of phase one of this project provided significant guidelines and contributions for the redevelopment of the We Care Primary pilot materials. The establishment of EEPUS and a publishing partnership with Juta Educational Publishers created an infrastructure which enabled the consideration of a range of possibilities for the ongoing development of the We Care Primary project, and enabled the redevelopment of the We Care Primary pilot materials for publication.

### 4.4.1 Emerging guidelines for the redevelopment of the We Care Primary pilot materials

Redevelopment of the We Care Primary materials was grounded in the guidelines and suggestions which emerged through teacher participation in the trialing, use and development of the We Care Primary materials during the first phase of the project. These guidelines were formulated from the data collected during the first phase of the project. Whilst there was ambiguity on some of the issues, I endeavoured to use triangulation and the principles of consensus and major trends to formulate some guidelines which would inform the process of editing and changing the We Care Primary pilot materials for redevelopment and wider distribution:

- The materials should retain their flexible nature, and should not be graded for different grades and standards in the junior primary school phase;
- A format of loose booklets should be retained to allow teachers to choose the activities they wanted to use;
- Background information needed to be extended or redeveloped in places;
- Some of the activities needed to be changed to be more relevant to younger learners and to a diversity of cultural experiences;
- The books should be made more accessible to second language readers, with a more 'user friendly' layout, which included complementary illustrations;
- Index pages should be provided in each booklet for easy access;
- The list of supporting resource materials should be updated and extended to include a local resources directory;
- The booklets should be redeveloped to include more social environmental issues;
- A set of booklets should be developed around environmental topics or issues to complement the seven booklets with a conceptual focus;
- Active learning and competency development should remain a focus of the booklets;
- Any redevelopments should support the use of the local environment as a resource for learning;
- Worksheets should be developed to accompany the materials where possible without hindering the flexibility of the materials.

These guidelines on the nature, structure and content of the materials were considered whilst planning both the redevelopment of the We Care Primary pilot materials, and further materials development possibilities. In the light of the above, a decision was made to retain the basic structure and activity sequence of the first seven booklets, whilst editing the content, language and structure of each page to reflect the above mentioned guidelines. Each activity was reviewed in the light of these guidelines and adapted or changed accordingly before being sent to the publishers for publication.

Additional suggestions for the development of topic-base
and the inclusion of extended resource directories inf
ongoing We Care Primary project packs (DF64, see
EEPUS (CR4.10) and the partnership with Juta Educatio
funding from TOTAL (SA) and WWF (SA), further m
possible. A decision (in collaboration with all the role
develop a second phase of the We Care Primary materi
focus on the development of topic-based or issue-based booklets which would follow a development process that was school-based, ongoing and sustained. Such a process would thus enable authentic participation and critical reflection-in-action on both the materials development process and the nature and use of the new materials.

*Figure 4.3* *EEPUS and Juta publishing staff meeting to discuss plans for the second phase of the We Care Primary materials development process*

### 4.4.2 Publishing and marketing the materials

While plans were being made for the development of ongoing We Care Primary materials, the first seven We Care Primary pilot booklets were being prepared for publication. Ongoing discussions with the publishers around decisions for artwork, size of the materials, layout design and the design of a file which would enable teachers to 'collect' the We Care Primary booklets on an ongoing basis was to further inform the redevelopment of the booklets. A full description of this process is, however, beyond the boundaries of this study. 5000 copies of the We Care Primary materials (see figure 4.4) were published and launched at a public function in September 1993 (CR4.12).

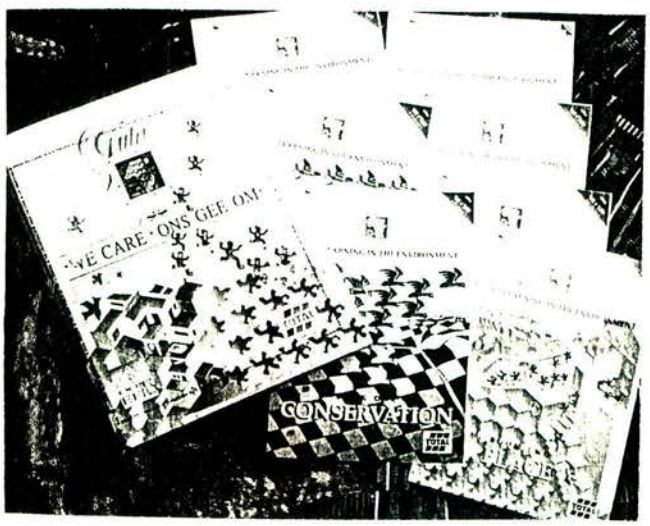


*Figure 4.4* *The We Care Primary materials. Published by Juta and released to the wider teaching community in September 1993*

To enable a process of 'marketing' and distributing the materials which would be congruent with the ideological underpinnings of the development process of the materials, I initiated a small scale training and support project with the Juta marketing staff. Several workshops were held at national branches with the Juta marketing staff. Through these workshops the marketing staff, through SWOT analyses and critical reflection, were encouraged to reflect critically on traditional marketing trends in the publishing industry, a process which highlighted many of the issues of poor quality materials provision in education (Kromberg (ed.) 1993), and identified

possible ways in which teachers could be introduced to the We Care Primary materials (CR4.13). This project developed into an additional 'cycle of inquiry' within the We Care Primary project. Workshops were planned with local marketing staff at a number of national venues (CR4.14), to provide teachers with short INSET opportunities which were aimed at introducing teachers to the We Care Primary materials as a resource for teaching environment studies in junior primary. Through this process I have been able to meet with more than 3000 teachers in six national centres, including ten Teacher Education Colleges (DF88, DF100). Whilst this process is reminiscent of the RDDA model, it provided many valuable opportunities to introduce junior primary teachers to environmental education.

*Figure 4.5* *Teachers attending the Juta / EEPUS We Care Primary environmental education workshops*

This process provided new perspectives for working with new educational materials for the marketing staff at Juta Educational Publishers. Seen in perspective of a history of merely selling and promoting materials to teachers, this approach heralded a change in their practice. This process was to have a significant impact on the further development of the We Care Primary project, as much of my time was spent on responding to requests for short INSET workshops to introduce teachers to the We Care Primary materials, thus limiting the time spent on further development of the We Care Primary project, which caused the process to take longer than was originally anticipated. A series of interviews with the marketing staff (I17, I18, I19, I20),

triangulated with their ongoing reports (CR5.15) and teacher evaluations collected at the 'marketing workshops' (DF100), confirmed the following outcomes of this research process:

- Teachers were appreciative of a marketing process which enabled them to interact with the materials;
- Exposure to, and increased awareness of, the role of environmental education in educational transformation (expressed by both the marketing staff and teachers attending the workshops) was visible;
- The need for an enabling and supportive infrastructure to support marketing processes such as these was realised;
- The value of materials development supported by contemporary research and a process of teacher participation was recognised by the marketing staff, and thus created new interest and efforts on their part to inform teachers of the qualities of the materials, making these materials accessible to a wider range of teachers nationally.

A full account of this aspect of the We Care Primary research project is beyond the scope of this report, but indications are that the relationship between materials which support alternative teaching and learning methodologies and their 'delivery' to teachers in the field is likely to provide publishers with a significant challenge in future. A further challenge for publishers which emerged from this process are the tensions between the authenticity and contextualised nature of local, participatory materials development projects and the requirements for generalisability dictated by large national marketing strategies. This uncovered a new tension, on the one hand, the ideological critique and transformatory notions of change implicit in participatory materials development projects with an emancipatory and transformative interest, and on the other, the long-standing tradition of RDDA approaches to materials development and the accompanying centre-to-periphery model of change advocated through RDDA approaches to materials development in the publishing industry.

The partnership with Juta Educational Publishers was to shape the We Care Primary project significantly, and created opportunities for increased quality in the production process, and enabled wider distribution through national structures. The materials are currently (October 1995) being submitted to all nine provincial education departments and, if approved, will enable

teachers to obtain the books through government structures (CR4.16). In this way the We Care Primary materials may be able to permeate the formal education structure and become accessible to teachers throughout the country.

## 4.5 SUMMARY AND CONCLUDING COMMENTS

### 4.5.1 Directions for further inquiry

The descriptions in this chapter highlighted the value of teacher participation in the development of the We Care Primary materials development project. This has been confirmed by the many ideas, suggestions and directions generated trough interaction with the teachers around a common agenda for change in education, and the dynamic, open and developing nature of the project. Important stimulators in this process have been the diverse contexts of the teachers, a meeting ground of enthusiasm, needs for appropriate resource materials and a commitment to quality education in the junior primary school phase.

Critical reflection, data analysis and this reflective discussion highlighted a number of issues, which, through a reflexive research process, were carried forward to the second phase of the project. This chapter details how an increased awareness of the limited nature of the teacher participation in the first phase of the materials development led to a new understanding of the concept of participation which needed to be extended, enhanced and re-searched through further inquiry into not only the nature and duration of participation, but also ideological and methodological assumptions which were being made about the notion of participation (see 5.4). As indicated in this chapter, notions of empowerment, emancipation, facilitation and control needed to be investigated further in the second phase of the research project. This reflected a need to find ways of enabling ongoing and more consistent participation in materials development processes in order to create the conditions for the development of materials which were contextual, emergent and which would focus on local environmental issues (see 5.5).

In addition, the nature and role of the materials in influencing change in classrooms provided a further focus for ongoing investigation. A need to consider the nature and structure of the

materials, and how issues of flexibility, choice and active learning pedagogies would influence classroom practice, curriculum development, the use of the materials and the meaning which teachers were making with the materials within their own particular situational constraints was apparent. The way in which the use of these materials could become part of curriculum development processes, needed to be investigated further (see 5.6).

The research process itself provided a further source of reflection during this phase. Reflecting on my role as researcher, the power relations implicit in the research activities as well as the concept of facilitation provided ongoing challenges. The ability to respond reflexively within the research project in such a way that it would enhance the research process and create the conditions required for emancipatory action research provided a further challenge for ongoing inquiry within this research project (see Chapter 6).

Phase one of this research project therefore represents a journey towards understanding and praxis of critical theories and socially critical environmental education ideals. During this phase I was able to develop an understanding of what it means to do critical social science in the formal education context in South Africa in a time of transition and transformation. I was, however, not able to 'master' the art of socially critical environmental education or emancipatory action research, and I therefore continue this journey of inquiry to learn what it means to do research and develop materials *with in* a better understanding of critical theories applied within environmental education practice.

### 4.5.2 Trip report or travel guide?

Writing this chapter has been a similar experience to that of writing a both a trip report and a travel guide. Most travel guides are written by people who have visited the places and pathways which they wish to describe, in anticipation that their descriptions will lead to further journeys (for themselves and others). They write of the diversity of experiences they have encountered in different places during their exploration of the area in question, in such a way that their descriptions pose an invitation to travellers seeking new adventures, adding their own longing and bias to the descriptions. In writing of their own travels, they provide fellow travellers with

an authentic account of people, places and the more typical features which characterise the area which is the focus of their writing. For a travel guide (and a trip report) to be a valid and useful document, it should be both authentic and accurate, and should map a wide range of possibilities for the traveller who is making choices on where to go (and where not to go), and how long to linger in any one place. It should thus reflect authentically the author's insight and experience of the terrain. To help travellers make decisions for new (or ongoing) journeys, the travel guide (or trip report) author normally pays attention to the finer details of a particular place or feature, hoping to persuade the traveller of the merits of the place and to provide the traveller with an insight into the nature of the place being described. Means of transport, cost and time implications need to be accurately described in travel guides and trip reports, as do bends in the road and other aspects which may affect the future well being of any traveller wishing to take the experience of the author to heart. This enables the traveller to plan carefully, with an eye to detail and method for their intended journey.

Through this chapter, I was able to construct a travel guide for the next phase of this research journey. This chapter has described the many facets of the first phase of this journey. Through the account in this report I have attempted to narrate the details of the places and people I encountered, the routes that I have taken, as well as some indication of alternative routes for further exploration. The account reveals the diversity of the historical and sociological features of the area being studied, and new directions for the project are mapped which may form the focus of further exploration. Danger areas and some of the safety measures are explained, as are some of the 'wrong turns' taken. The main purpose of this chapter was to provide an account which could inform further choices for the direction taken in phase two of the project. Through writing this chapter as a travel guide and trip report, I have not ended this phase of the journey, but rather set many possible directions for a further journey of inquiry into the complexities of doing research in environmental education. Having compiled a comprehensive travel guide I was now ready to use this guide to map the next phase of my journey.

# PHASE TWO

# A JOURNEY *WITH/IN* SOCIALLY CRITICAL ENVIRONMENTAL EDUCATION

*When the train starts, and the passengers are settled*
*To fruit, periodicals and business letters*
*(And those who saw them off have left the platform)*
*Their faces relax from grief into relief,*
*To the sleepy rhythm of a hundred hours.*
*Fare forward, travellers! Not escaping from the past*
*Into different lives, or into any future;*
*You are not the same people who left that station*
*Or who will arrive at any terminus,*
*While the narrowing rails slide together behind you;*
*And the deck of the drumming liner*
*Watching the furrow that widens behind you,*
*You shall not think 'the past is finished'*
*Or the 'future is before us'.*
*At nightfall, in the rigging and the aerial,*
*Is a voice descanting (though not to the ear,*
*The murmuring shell of time, and not in any language)*
*Fare forward, you who think that you are voyaging;*
*You are not those who saw the harbour*
*Receding, or those who will disembark.*
*Here between the hither and the farther shore*
*While time is withdrawn, consider the future*
*And the past with an equal mind*

(From The Dry Salvages III, T.S. Eliot)

# CHAPTER 5

# CHANGING ORIENTATIONS TO MATERIALS DEVELOPMENT WITHIN THE WE CARE PRIMARY PROJECT

*If you came this way,*
*Taking the route you would be likely to take*
*From the place you would be likely to come from,*
*If you came this way in time, ...*
*If you came by day not knowing what you came for,*
*It would be the same, ...*
*... And what you thought you came for*
*Is only a shell, a husk of meaning*
*From which the purpose breaks only when it is fulfilled*
*If at all. Either you had no purpose*
*Or the purpose is beyond the end you figured*
*And is altered in fulfilment*
(From Little Gidding I, T.S. Eliot)

## 5.1 INTRODUCTION

These words of T.S. Eliot, along with other guiding passages throughout the research report, have been used to indicate the shifting boundaries and changing destinations of this research journey. They serve as a reminder that predetermined pathways in social science research are likely to be re-directed, that change is "... not a fully predictable process ..." (Fullan 1991:107), nor is it linear, temporal or evolutionary (see 2.2.3). This perspective highlights that no predetermined ends are certain, and may never even be in sight. Reaching the 'end' of phase one of this journey only served to indicate a variety of routes which needed to be revisited, or routes which I could travel along for further inquiry during the second phase of the research journey. Phase two of this research journey can be described as a search for making sense of, and responding to, unresolved experiences and an ongoing engagement with new research areas illuminated through the research activities in phase one (see 4.3 and 4.7.2) and through continuing interaction and research during phase two of this journey (see 5.4, 5.5 and 5.6).

This chapter, which represents some 'windows of insight' into the second cycle of inquiry of this research project (see 3.3.3), is essentially *an incomplete account* of phase two of the research journey. A full and detailed analysis and description of the research process which took place between 1993 and 1995 is beyond the boundaries and extent of this report. The extracts and positions chosen for this chapter, are presented merely as *an introduction to further possibilities for research* within the We Care Primary Project, outlined as such in Chapter 6.

## 5.2 MAPPING THE DIRECTION FOR PHASE TWO OF THIS RESEARCH PROJECT

Reflecting on the possible pathways towards transformation outlined in Chapter 2 and the research 'outcomes' of phase one (see 4.3), a number of areas for ongoing research became apparent (see 4.5.2). Whilst the original research question remained central to the inquiry process, the research project changed 'direction' and the research activities proceeded within a diversity of interrelated sites of change. During this phase clarity beyond technicist notions of action research emerged through consistent engagement with teachers around the issues of learning to engage with emancipatory action research (see 5.3 and 6.4). Ongoing reflection on processes of 'doing' action research, informed by perspectives and theoretical positions on action research (Carr and Kemmis 1986; Davidoff *et al.* 1993; Elliott 1991a, 1991b; Flanagan 1992 (ed); Grundy 1982, 1987; McKernan 1991; McTaggart 1991a; Robottom 1992; Stevenson 1995; Whitehead and Lomax 1987; Winter 1987) revealed the complexities of 'doing social science' (Goodman 1992:118, see 3.3.5.7).

Contrary to the usual simplistic descriptions of the action research process (see figure 3.2 and see 3.2.2) the multi-dimensional nature of doing action research became apparent through multiple cycles of inquiry (see 6.5.1) which were occurring simultaneously within a larger cycle of inquiry (represented in this report as phase two). These cycles of inquiry, or sites of change, reflected my ongoing engagement with the assumptions and theoretical ideals of socially critical environmental education (see 2.2.4, 2.4.3, 4.5.1 and 5.7), and represent *a journey with in* socially critical environmental education. This phase of the research journey emerged as critical and collaborative processes of planning, action and reflection on:

- The process of doing research with teachers, the chosen research orientation and use of research methods and techniques (see 3.3 and Chapter 6);
- The process of acting reflexively to create and sustain enabling conditions for authentic teacher participation within the project (see 5.4);
- The establishment of, and interaction with, a widening network of teachers around critical curriculum development and materials development processes (see 5.6; AM40, D82, DF83, DF85, DF86);
- The process of developing materials, and the way in which these processes were able to challenge the RDDA model outlined in 2.3.2. (see 5.5);
- The process of developing materials which would address or include more specific local environmental issues (CR4.2, DF64-DF76), and which would emerge out of a process of engagement with local environmental action (see 5.5, DF78);
- The links between decentralised curriculum development, participatory materials development and INSET, and the potential role of resource materials as support for INSET programmes (see 5.6);
- A reflexive response to, and participation in, various broader educational events such as INSET debates (DF114, DF136), materials development forums (CR5.6), curriculum development processes (DF87, DF94, DF141; see also CR5.1, CR5.2), inter-departmental linking (before and during the merging of education departments; DF94, CR5.3), and networking with the Western Cape Education Department subject advisory services on issues of transformation in junior primary education (see 5.6 and CR5.4, DF92, DF138);
- The engagement within the relational dynamics and tensions of local participatory materials development processes, and the goals and traditional orientations of commercial publishing (see 5.5, AM44, AM71, CR5.5); and
- The ongoing engagement with the social and historical realities of classroom practice, the pedagogical climate of junior primary classrooms, resourcing of education, and the development of quality educational provision for this school phase (CR5.4).

The apparently small challenge of materials development for junior primary environmental education therefore has implications for a range of interrelated issues. The experience of this research project is echoed by a similar participatory materials development project by Robinson

(1994:257). She observes that:

> ... in the absence of organisational development of schools, many schools do not have the capacity to plan for the implementation of new materials. Many principals do not provide the necessary leadership and support to allow for curriculum innovation, and most curricula are prescribed, disempowering even the most enthusiastic teacher ... This sets up a fundamental tension in our work ... *Materials development, it would seem, is but one small aspect of teacher development in the broadest sense* (my emphasis).

Within the We Care Primary project, the range of issues which were emerging had wide implications for the inquiry process. If the materials were to be developed and used in a way which would answer the ideals of transformation and socially critical environmental education in a formal education context, these issues needed to be better understood and, where possible, addressed. For the purposes of this research report further descriptions of the research activities will be limited to an overview of the following areas for ongoing research:

- The reflexive response to the 'weaknesses' and paradoxes (see 4.5.1) which emerged from the development of a better understanding of the participatory orientation to materials development in the first phase (see Chapters 3 and 4). Finding ways of embracing *a notion of authentic teacher participation* which is based on core democratic values (CR5.7) also provided focus for this inquiry. *The development of* ***enabling conditions*** *for authentic teacher participation within the project became a central theme of this phase* (see 5.4);
- *Ongoing development of environmental education resource materials around local environmental issues* and a concern for the provision of quality education in junior primary education became a further focus of the phase two inquiry process through the ongoing participation (CR5.8) of junior and pre-primary teachers in the materials development process (see 5.5); and
- The relationship between *resource materials as a* ***support*** *for participatory curriculum development in INSET programmes*, and the resulting interdependent relationship between curriculum development, materials development and INSET created a focus for further inquiry during this phase (see 5.6).

## 5.3 RESEARCH DESIGN AND REPORTING FOR PHASE TWO

Growing engagement with the assumptions and realities of emancipatory action research 'working' within the relational dynamics of the We Care Primary project (see 3.5.3, 4.3.5 and Chapter 6) emphasised the observation of McTaggart (1991a:2) that, given the complexity of real social situations, it is never possible in practice to anticipate everything that needs to be done, nor is it possible to experience action research as neat, controlled or contained cycles of planning, action and reflection. The open-ended research design (see 3.3.3) enabled an exploratory orientation to the research process itself, which developed through ongoing materials development and research, literature reviews and critical deliberation, consultation, collaboration and dialogue throughout this phase. This, together with deepening theoretical insights about the nature of action research (see 5.2) and environmental education research (Hart 1993; Janse van Rensburg 1994, 1995; Mrazek (ed.) 1993; Robottom and Hart 1993a; Wals 1993), helped reveal an emerging paradox. As reflected in Chapters 2, 3 and 4, I initially assumed that by working from an action research orientation I would be doing research which would counter the assumptions of the positivist research tradition[1]. What became apparent was that the action research orientation in phase one of the project was being used more as an 'implementation device' for externally conceived change ideals. The participants were participating, whilst I, the researcher, was engaged in cycles of critically reflecting on the research action. In this scenario, the action research process was little more than a means of engineering change (see CR5.13), disguised by the rhetoric of critical theory and an assumed emancipatory orientation. This reflects a technicist approach to action research, described as

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[1] The positivist research tradition in environmental education is derived from the natural and physical sciences (Marcinkowski 1990:10-11, cited in Robottom and Hart 1993a). Robottom and Hart (1993a:8) note that "... (w)ithin educational research, positivist forms of inquiry assume that educational contexts, like natural (biophysical) systems, contain law-like generalisations which are identified and manipulated as systems of distinct empirical variables. The task of educational research is one of quantifying behaviour, hence the focus on problems of procedure (validity, reliability and statistical rigour)". The assumptions or basic belief system of positivist inquiry is based on a naive realist ontology, an objectivist or empiricist epistemology, and a methodology which is preordained and experimentalist and these reflect (and create) the dualisms upon which modern western thought is based (see 2.2.2). For further critique on the positivist research tradition in environmental education see Mrazek (ed.) (1993), Robottom and Hart (1993a), Robottom (1993), Janse van Rensburg (1995) and Wals (1993).

'other directed' by McTaggart (1991a:27), and as 'product centred' by Grundy (1982:25), where the action is designed to 'produce' or 'create' something and which often involves the "... co-option of teachers to work on externally formulated questions and issues which were not based in the practical concerns of practitioners ..." (McTaggart 1991a:27). In this scenario the participants do not necessarily become committed to the motivating 'idea', and whilst their actions and deliberations may be authentic within the context of the project, once the 'action' is over the teachers revert to their former styles of teaching. This may be part of the reason for the non-attendance of many of the participants in the follow-up workshops during phase one (see 3.4.3). The significance of situations and processes, which could facilitate collaborative and reflexive searching for solutions to problems and ongoing tensions in the research process through critical review and ongoing experience, were not realised at the time and were therefore not a focus of significant concern during the first phase of the research.

During the second phase of the project my relationship with teachers became more of a partnership, in which we were involved in the co-construction and collaborative development of resource materials. Viewed retrospectively, many of our actions indicate reflexive searches for 'better' ways of doing environmental education in the junior primary school phase, and developing quality resource materials for this school phase. The view of environmental education research being enacted *within* rather than on, or for, environmental education (Janse van Rensburg 1994:15), together with the conceptual tool provided by the concept of reflexivity [2],

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[2] In attempting to address some of the emerging issues arising from the first phase of the research project (see 4.3.5), the concept of *reflexivity* provided a useful conceptual tool for gaining further clarity on the emergent issues. Reflexivity, which involves "... critical self reflection both of the researcher him/herself and the effect that s/he has on the research process ..." (Bozalek and Sunde 1993/4:78) became an important aspect of phase one reflections and phase two research action. Wilkinson (1988, cited in Bozalek and Sunde 1993/4:78) distinguishes between 'personal' and 'functional' reflexivity, although she sees them as closely linked and inseparable in any research process. Personal reflexivity refers to the researcher's own identity which includes the personal characteristics, values and personal interests of the researcher, and the influence these aspects have on the research design and direction. By focusing on personal reflexivity the researcher is able to focus both on changing perceptions and shifts in orientation in the research process, as well as on the motivation and social processes which enable and influence changing perceptions within a research project. Wilkinson's concept of functional reflexivity is concerned with the realisation that knowledge production and legitimation, research action and methodologies and their use within a research project are historically structured and situated. The choices we make about ideological positions and in particular the methods we use are influential in creating our concepts and thus constructing our knowledge. Janse van Rensburg (1995) identifies a reflexive orientation

provided further clarifying perspectives for a change in orientation in the phase two research process. The research thus reflects a concern for clarifying and embracing action research as a critical social process of change, rather than a concern for management, facilitation or empowerment through action research strategies. The valuable characteristics of action research, which enable immediate contributions to the practical improvement of the research action and the flexibility to respond to changing circumstances and new insights (Ashwell 1992), continue to provide the We Care Primary project with a useful and emergent design.

In reporting the wealth of experiences represented by the data collected for this phase of the research (see Appendix 1), I have chosen to present only selected extracts to illuminate the themes outlined in 5.2 as potential sites of change in this study. Although these are described as discrete areas of research, or are reported as more or less discrete entities (see 5.4, 5.5 and 5.6), the complexity, interlinking and overlapping nature of the multiple cycles of inquiry (see 5.2) can only be partially represented through writing (see 1.3). It is beyond the scope of this research report to analyse and report the complexities of the interlinking sites of change or how they relate and overlap. However, to do some justice to the rich diversity of research activities, I have chosen a series of 'stories' which represent my lived experience, my growing familiarity with doing research with teachers and my growing experience of developing materials through teacher participation. The use of 'stories' in this chapter follows a narrative style of communication which, according to Young (1986:240, cited in Dudley 1992:341), "... demonstrates a connectedness and a sense of movement over time". These stories attempt to reveal how phase two of this research process (or cycle two) emerged from the reflections of the first phase (cycle one), and how the research activities were often planned to respond, through ongoing action research, to the issues and themes emerging from phase one of the research

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to environmental education research in which social processes of change are regarded as a focus for research. She (1994:14) sees a reflexive orientation to be concerned with broad processes of social transformation through "... critical and contextual review and action". Within this orientation *insights gained from the research are best shared within ongoing research processes* ( Janse van Rensburg 1995:202, my emphasis). These insights inform the action of the researchers/practitioners on an ongoing basis and can then be taken further, enabling the participants in the research process to engage with/in processes of change enacted "... within and through collaborative networks, rather than the engineering or facilitation of others towards certain outcomes" (Janse van Rensburg 1995:201-202). The reflexive insights helped to create "... beacons guiding this process ..." in which "... the course itself ..." could transform "... the indeterminate into the determinate" (Doll 1989:250, cited in Janse van Rensburg 1995:201).

project.

The stories chosen for this chapter are grounded in evidence and experience captured through a diverse collection of activities (CR5.9) and data sources (see Appendix 1, DF46-160). The participants in the inquiry have, throughout the research process, had access to the emerging data through a process which 'recycled' the data from workshop to workshop (with the same teachers) and across workshops (with different groups of teachers). The data collected during initial workshops was used as 'capital' to plan follow-up workshops, and it was also used to identify areas which teachers could work on between workshops. The use and review of data became an integral part of the ongoing materials development process (see 3.3). The evidence or data collected for this phase (see figure 3.4 and 3.3) consists of teacher work done during the workshops (DF64-95, DF118-128), additional documentation pertinent to the research areas (DF109, DF110, DF111, DF112), observations, field notes (DF105), interviews (DF52, DF60), research reports (DF147), documentation generated through project activities (DF117, DF146, DF151, DF160), correspondence (DF143) and research journals kept for 1993, 1994 and 1995 (DF103, DF104, see CR 5.9). A series of analytic memos (see 3.3.3.5) were compiled to make the data more manageable (AM20-AM76, see Appendix 1) and to help with interpretation, validation and triangulation (see 3.3.5).

To work towards greater validity (see 3.3.5.4) I attempted at all possible opportunities to use data as a source of information during workshops, and to keep the participants informed about how and why I was using the evidence. I endeavoured to negotiate the previous session output and my interpretation of it with teachers, and I endeavoured to keep records (DF105, DF116) of their responses to the data. This, however, was not always possible due to the time needed to return data to groups for validation and discussion. This process worked well in situations where ongoing contact had been established, but was not so easy to maintain if the contact with teachers was once-off, or if teachers were 'removed' from their particular school context. Due to the establishment of an infrastructure to support the project extension (EEPUS) and my role as a junior researcher employed to respond through ongoing research to the phase one research issues and themes (see 4.3), a distinction between my role as project co-ordinator and participant researcher was often blurred, and at times a dilemma arose between project management and

research management, made more complex by my pro-active and ongoing participation in the broader educational context in the Western Cape (DF92, DF94, DF114, DF136, DF138, DF141). However, to counter any misinterpretations or misrepresentations, I shared my rough drafts of the stories with the participants concerned (CR5.10). I asked for their comments or changes before reworking the stories into the 'final' accounts contained in this report.

Emancipatory action research with teachers in schools remained a focus of the research enterprise during the second phase of this research journey (see 3.5.3, 4.3.5, 5.4, 5.5, 5.6 and Chapter 6). The primacy of the notion of collaboration and participation is important in emancipatory forms of action research (see Chapter 3). McTaggart (1989a:3) usefully differentiates between 'involvement' (reflected in phase one) and 'authentic participation':

> ... *authentic participation* in research means sharing the way in which research is conceptualised, practised and brought to bear on the life-world. It means ownership - responsible agency in the production of knowledge and the improvement of practice. Mere involvement implies none of this; and creates the risk of co-option and exploitation of people in the realisation of the plans of others (my emphasis).

The search for, and re-search of, ways of creating situations of authentic participation in the research process occupies the position of central thesis in this research report (see 2.3.4, 3.4.3.1, 4.3.4, 5.4 and 6.4).

## 5.4 ESTABLISHING THE CONDITIONS FOR PARTICIPATORY MATERIALS DEVELOPMENT

As Harris (1994:67) points out, an ever present danger with transformation rhetoric lies in the possibility that it may constitute little more than rhetoric. King and Van den Berg (1994:44) argue for transformation proposals which are *realistic* and which:

> ... seek to bring about change in actual schools and classrooms, ... recognising that the past cannot be changed overnight, and that due planning is needed to bring about radical change and improvement.

Proctor and Monteith (1993:8) distinguish between 'transition' and 'transformation' and see the

transition period as one which is focused on short-term reforms. If the goals of transformation are to be realised in the long term (2.4.3), and if we are to avoid reverting to technicist strategies of reform and further disempowerment of teachers (see 4.2), I will argue that the period of 'transition' should be focused on *initiating the conditions* for long-term transformation. In the first phase of this project it was clear that much effort, time and interaction would be needed to build and sustain relationships of trust which are necessary for collaborative and participatory research processes. As Davidoff *et al.* (1993), Fullan (1991), Hart (1993), Robinson (1994) and Robottom (1987a, 1992) note, a key aspect of teacher and classroom change is linked to the *opportunities which teachers have to participate in change processes*, and the nature and extent of the participation which occurs during the interaction process. Hart (1993:119) notes that "... (a)uthentic participation in curriculum research and development should be supported ...", an aspect which is essential for authentic materials development through teacher participation in a context of change and transformation.

### 5.4.1 A challenge for educational action research

Educational action research can be viewed as a process which aims to support the control of education by self-critical communities of researchers, which includes teachers, parents, educational administrators and others (Davidoff 1993:75). The *creation of conditions* under which these participants can take collective responsibility for the development and transformation of education can be viewed as a task of critical educational science. Educational action research offers a means by which this can be achieved (Carr and Kemmis 1986:211). Hart (1993:119) sees the challenge for environmental educators not as the production or development of more or better curriculum project materials, but "... one of *creating the conditions* (my emphasis) for participatory action research as a *pre-requisite* to curriculum planning and professional development". Harris (1994:67) comments on the rhetoric-reality gap which exists between democratic ideals and the social conditions which exist in schooling. He states that:

> ... to speak of ... maximising people's opportunities 'to determine their own destinies' within a structural context wherein such opportunity cannot realistically exist is, if not to embrace idealism then at least to engage hollow rhetoric. If these opportunities do not prevail then a *precondition for seriously holding such an educational aim would be to construct the social conditions in which the required participation could be realised.*

Stevenson (1995:198) extends these arguments further by noting that the challenge for action research in schools is not only to create the conditions for action research to take place, but to help "... reconstruct a school environment that is supportive of sustaining its own ongoing practice without depending on external support ...", and views educational action research as a means of transforming schools "... so that educational practitioners possess the supporting conditions to regularly engage in action research". He describes (and supports) a conception of action research which

> ... encompasses a threefold purpose of improving one's practice, one's understanding of practice, and the situations in which those practices are carried out ... in this ... there is a concern for the social and institutional structures that shape teaching and schooling ... (T)his conception recognises that contextual factors influence curriculum, [materials development], teaching and educational change and therefore includes the broader conditions in which educational practices take place ... Besides reflecting inwardly on one's intentions and actions, reflection and analysis are also directed outwards toward the situations circumscribing one's practice ... This conception suggests that action research itself can play a role in contributing to the construction and reconstruction of school cultures and structures that support and help sustain action research as a regular practice in schools (*ibid* 1995:199).

Throughout this phase I was concerned with finding better ways to work with teachers around the development of materials. This inquiry led to a process in which I tried, with teachers, through ongoing action research, to identify *the conditions which enabled participatory materials development processes* to be productive, to challenge the status quo, and to contribute to the process of transformation in junior primary education.

Fullan (1991:139) notes that most developers or advocates of change tend to confuse 'the change' with 'the change process' and notes that "... people may be at different starting points, with different legitimate priorities, and that the change process may very well result in transformations or variations in the change". This implies that 'the change', represented by new We Care Primary materials or new activities for use in classrooms, should not become an object of change, to replace or conceal the change process. The process of responding to teachers, generating and enabling dialogue around questions of how and where to 'start' developing environmental education materials which are grounded in their experience and in an

improvement in their (and my own) practice, represented a processural notion of change, embraced in phase two of this research project. This reflects Stevenson's (1995:199) conception of action research as a process of "... understanding and transforming educational situations".

### 5.4.2 Towards a notion of authentic participation in environmental education materials development

For teachers to be working with other teachers at the school and classroom level is a necessary condition for improving practice. The development of collegiality (Fullan 1991:139; Robinson 1994:19) is a significant 'practical' benefit of the change process. Fullan (1991:142) rejects the notion of the passive professional, and supports a concept of *interactive professionalism* which implies

> ... teachers and others working in small groups interacting frequently in the course of planning, testing new ideas, attempting to solve different problems, assessing effectiveness etc. It is interactive in the sense that giving and receiving advice and help would be the natural order of things ... [where teachers become] ... continuous learners in a community of interactive professionals.

Little (1990:14-15) warns, however, that one should be careful not to assume that an increased interaction between teachers is automatically a good thing, and warns against superficial collaboration, noting that this kind of collaboration is likely to have little impact on the culture of the school. Collaboration[3] (or authentic participation) involves deeper forms of interaction such as joint planning, observation, and experimentation, and is dependent on "... the structural organisation of task, time, and other resources in ways not characteristic of other forms of collegiality". Fullan (1991:137), in considering the practical implications of collaboration, notes that

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[3] Hargreaves (1991:14, cited in Fullan 1991:136) distinguishes between 'contrived collegiality' and 'collaborative cultures'. Contrived collegiality is characterised by a set of formal, specific, bureaucratic procedures and can lead to forced contacts among teachers. True collaborative cultures are "... deep, personal and enduring". They are not "... mounted just for specific projects or events. They are not strings of one-shot deals. Cultures of collaboration are constitutive of, absolutely central to, teachers' daily work". Huberman (1990:2, cited in Fullan 1991:136) observes that "... collegiality does not automatically translate into observable changes in classroom practice". Fullan (1991:136) notes that "... we cannot assume that autonomy is bad and collaboration is good ... we must put the question of autonomy and collaboration in a perspective conducive to assessing the conditions under which each might be appropriate".

> ... instead of seeking widespread involvement ... it may be more appropriate, especially in larger schools, to stimulate multiple examples of collaboration among small groups of teachers inside and outside the school ... that become 'deep, personal and enduring' (Hargreaves 1989) in the service of improvement.

To clarify some of the conditions for *enabling authentic teacher participation* in processes of change such as the We Care Primary materials development project, I (through the phase two research process) critically challenge the participatory orientation of the project developed during phase one. Seen retrospectively, during the first phase of the project, I approached teachers with a view to involving them in the trialing, reviewing and development of resource materials with potential to transform classroom practice. Through the nature of the participation (see Chapters 3 and 4), and the nature of the task at hand[4], teachers involved in the first phase process were possibly no more than high level technicians (see 4.2) being asked, under the auspices of democracy and participation, to 'rubber stamp' or validate the pilot materials (reflecting many elements of the RDDA model). Whilst the process was not as simplistic or as clear cut as this implies (see 4.3.1.3), elements of viewing the teacher as technician were being advanced through the conditions which determined the type of interaction possible at the time. Although teachers were participating, the nature of the participation could be seen to be questionable, with little or no lasting teacher development or classroom reform resulting at the time (1991). Whilst efforts such as these *do* contribute to establishing the status of the teacher as decision maker and participant in reform processes, a more rigorous investigation into the notion of authentic participation is needed to understand the nature and extent of the more deeply rooted differences of value and political interests that are inherent in reform initiatives (Lotz 1995a:8). In creating the conditions needed for lasting transformation, care should be taken to prevent the *status quo* being maintained under the auspices of democracy and participation.

Authentic participation based on core democratic values (see CR5.7) implies a mutual relationship between participants and respect for one another's endeavours. Through a process of this nature all contributions to the transformation process are viewed in a way which will

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[4] The major focus of the 'task at hand' for phase one was trialing and testing the We Care Primary pilot materials. The research activities were therefore primarily concerned with *the resource as an object of change*.

enhance collaborative meaning making. Initiatives are then placed within social, historical and spatial contexts which are relevant to the participants. A condition in junior primary education which strives for authentic participation could go a long way towards redressing the general status of junior primary teachers[5] (Lotz 1995a:9). This could contribute in various personal and professional ways to enhanced self-worth, trust, confidence, initiative and mutual respect - essential characteristics of confident and able teachers.

To illustrate how the type of workshops and the nature of the task at hand (see 5.5) changed in response to a critical review of the orientation and focus of the phase one workshops, I draw on extracts from my 1993 research journal. These extracts or 'stories' have been chosen to illustrate how the interaction during phase two of this research process reflected a more lasting and more personally interactive engagement with teachers at schools, and reflected action-based inquiry into the notion of authentic teacher participation:

> I will have to re-think the way in which these workshops have been done [reflection on phase one workshops]. The short workshops with limited time to interact with teachers do not seem to be an adequate way of creating the spaces for the teachers to really get involved. There is also little time for us to really talk and reflect on the things they have been doing in the classroom. I asked a group of teachers over tea time today how they would feel about running a series of workshops at their school to really work thoroughly on the issues which they identified during the workshops. They were quite excited about the idea, and were anxious to know whether we could arrange a workshop at their particular school. They even suggested inviting the other schools from their local area. I will think on it some more. Perhaps I will run it past some other groups of teachers, to 'test' their opinion on the matter (journal entry, 23-06-1992).
>
> I have just spent a very productive day at the Scottish Development Education Centre.

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5 Primary teachers in South Africa have been immensely disempowered and marginalised (King and Van den Berg 1994; Macdonald 1991). Historically primary teachers have been viewed as less able and less proficient to make management or curriculum decisions than secondary teachers (Flanagan 1992). This phenomenon has, in many cases, degenerated into academic and professional discrimination, especially in the junior primary phase, where teachers who achieved lower academic grades at colleges are 'sent down' to junior primary. This has been compacted by a tradition of gender discrimination (NEPI 1993) with severe gender imbalances being the order of the day, the majority of teachers being women, with the majority of the management positions being held by men. Both the NEPI (1993) and CEPD (1994) proposals recommend an affirmative action policy for female teachers. I would argue that an affirmative action policy is needed for all primary school teachers, and more specifically for junior primary teachers who are often considered the 'lowest' in the school (Baxen and Lotz 1994).

This was the first real evidence of participatory materials development I have seen (after three months of searching in Europe and the UK). I talked with the director and she gave me an evaluation paper on the process which they followed in developing materials for their Open Learning Project (Naja 1991). It seems that they worked with smaller groups of teachers, and had an author support programme to support teachers in writing the materials. She said that a process of this nature was very valuable because teachers get a chance to share their concerns, but are not 'alone' because they (the SDEC) are also in the process, and can provide support to the teachers when they want it. She said that it is really quite interesting to work in such a way because you get personally involved with the teachers and the schools, and through that process, you learn a lot from the teachers and the school environment. The school I visited yesterday was a good example. The way they have worked on developing their tree nursery would provide a brilliant source of ideas for a resource on trees, for example. If I think of the workshops I did before I left, then I definitely think the ideas I discussed with the teachers about ongoing workshops at schools is a better option for opening spaces for teachers to participate in more meaningful ways (journal entry 23-10-1992).

I sent out the letters of invitation to the schools who participated last year, to see how many would be interested in participating in workshops at their schools. I also contacted C8 today at S2, and she says that it would be a great idea, she just wanted to discuss it with the teachers first before we started a round of workshops at their school. She is quite keen because they are just starting to change their curriculum to a theme-based approach, and she says the teachers are using the pilot booklets for their planning (journal entry 25-01-1993, see CR5.8).

*Figure 5.1* *Smaller workshops with teachers at their schools created opportunities for authentic participation in the development of new We Care Primary materials*

> Today I had the first of a series of workshops at S5. It was an interesting social event (for me and also for them I think) because they invited the pre-primary teachers from across the valley to join the workshops. It was apparently the first time that these two schools had met for a workshop at either of their schools. I am constantly learning about the successful way in which apartheid ideology has created a society in which everyone is so 'separate'. Anyway, we were eight all together and we had a really interesting session talking through a wide range of issues. Eventually we decided that we would focus on litter and recycling as a topic, as it would be relevant to both schools. We started planning some project ideas, but our time ran out so the teachers are all going to collect ideas which they like using or some new ideas for next time and we will focus on developing and shaping some kind of framework for our project next week (journal entry, 24-04-1993).

> I find the workshop series which I now have running at S2, S3, S4, S5, S7, S11, S12 and S13 to be working quite well. I am getting to know the teachers much better than at last year's workshops, and there is definitely a better relationship between us now. S12 is still a bit large (there are 16 teachers at that workshop), but I have asked them to work in little groups. It seems to be better that way. I enjoyed the workshops so far with S13 because they seem so keen to talk through their issues in such detail. They seem to be finding the workshops useful too. Yesterday Tessa said that it is so useful to get time to talk with each other and to think carefully about how to teach little children about violence. They have come up with some really nice ideas for the Peace booklet. One doesn't think of all the possibilities. Normally when you think of Peace, you only think of guns, bombs, crime etc. and not of all the positive things one can teach children too. I am really learning a lot from these sessions (journal entry, 03-07-1993, see CR 5.11 and Appendix 4).

> ... another thing which seems to be showing up is how well these sessions are attended, it is quite different from the evaluative workshops which I had last year. I suppose it is because the teachers are enjoying the sessions, and because they are committed to developing their choice of topic, and maybe also because I do most of the travelling now, and they only have short distances to travel, if any (journal entry, 05-05-1993).

> I find that working in semi-formal groups with focused, but informal discussions, seems to be the most productive. I tried a 'worksheet' activity with the group yesterday, but it seems that they didn't enjoy it as much as last time. T6 said after the workshop that it was better if they discussed the activities together before planning them, and not first plan their own activities and then discuss them with the others. They seemed to like working together for most of the workshop (journal entry, 18-06-1993).

The development of a 'series' of workshops which were focused on local issues, smaller, more responsive and emergent, aimed at generating new materials and aimed at developing reflective practice at individual schools thus helped to create the conditions for authentic participatory

materials development. The participants at these workshops were often the staff of a particular school (S1, S2, S3, S4, S6, S8, S10, S13) and 'neighbouring' staff from schools in the local area (S5, S7, S9, S11, S12). Workshops of this nature had the following advantages for developing materials with teachers:

- The topics chosen as a focus for the materials were relevant to the local environment of the school/s and could therefore be developed from teachers' experience of those issues which influence the learning experiences of young learners, thereby making the materials more relevant, emergent and authentic;
- Ongoing contact with specific (and smaller) groups of teachers created an environment which enabled the establishment of relationships of trust, open dialogue and a more 'easy' atmosphere in which the research could take place;
- Teachers were working together with colleagues from their own school and/or colleagues from neighbouring schools, and were therefore not 'removed' from the historical, spatial and social context of their teaching, making issues-in-context an accessible focus for discussion and critical reflection, and the resulting data more authentic;
- Collegiality and peer support were made more accessible and possible through this process, and teachers could share their learning processes, reflections and concerns not only with me who represented an 'outsider', but also with colleagues who could provide 'support' in context. The opportunity for teachers to become involved as reflective practitioners with supportive co-learners was made more possible through workshops such as these. In a number of instances the principals[6] of the schools participated in the workshop series (S2, S5, S7, S8, S9, S11, S12, S13), which helped to provide an environment of whole-school support and made teachers more comfortable with the prospect of working with new materials and changed teaching and learning approaches; and
- Less time and little or no financial expense were demanded from the teachers as I was

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6 In many instances the principals were more 'part of' the school curriculum development process than is the case in more traditional secondary or larger primary schools. The principals which attended were all principals of pre-primary schools, or principals of junior primary schools and were all women. They were all currently engaged in a process of whole school development *with* their staff.

able to go to the schools and start the workshops as soon as the teachers had completed teaching, thereby enabling workshops to be over by early afternoon instead of early evening (as in phase one). This was a significant practical aspect which was able to respond to some of the time stress indicated by teachers as being a constraint to participation in phase one.

### 5.4.3 Towards a participatory research role for teachers

These advantages are supported by Posch (1988, cited in Hart 1993:120), who argues for a 'participatory research' role for teachers in the further development of environmental education in schools. He attaches importance to three perspectives:

- The improvement of teacher-teacher communication and the integration of a greater number of teachers/schools into this exchange of experiences (see 5.4.1, CR 5.12);
- The production of knowledge on environmental project instruction by the teachers themselves (DF158, DF159, see 5.5 and Appendix 4); and
- A more dynamic and innovative design of infra-structural conditions for this sphere of work (DF86, DF87, DF91, DF92, see CR5.14[7]).

Tabachnik and Zeichner (1991, cited in Robinson 1992:12) identify different levels of teacher reflection: about subject matter, about teaching strategies, about student growth, and about the social and political context of schooling. South Africa lacks a tradition of teacher reflection on all these levels, and the constraints on developing teachers as reflective practitioners are

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[7] The example contained in the case record shows an index page of a booklet written with teachers at Sun Valley Primary school about their experience of developing an integrated approach to classroom practice. An essential aspect of their experience of curriculum change was a revision of their daily timetable, which enabled the time needed to accommodate a process orientation to teaching, in which learners were active participants. The revised infra-structural conditions, brought about through a change in time-tabling, enabled teachers to plan for and learners to participate fully (with enough time available) in active learning processes and problem solving activities.

enormous (Davidoff 1993; Walker 1993). As there seems to be little time or encouragement to reflect critically on classroom practice, and little or no history of encouraging reflective practice, experimentation or innovation, participatory action research offers a powerful way to develop resourcefulness in teachers rather than providing resources for them. It offers an important way to facilitate teachers' own potential for self-evaluation and peer support and evaluation, instead of them relying on authoritarian external measures of success.

During most of the We Care Primary materials development workshops in phase two, the focus of teacher reflection was on subject matter (centring on discussions and reflections on subject matter chosen to address local environmental issues) and teaching strategies (the development of activities). Trialing the activities focused teachers' attention on their classroom practice (see 4.3.2.1, 4.3.3.1 and 4.3.3.3) and also on the learning of the children (see 4.3.2.3 and 4.3.3.2). Reflection on the social and political context of schooling and critical reflection on the role of schools and schooling in responding to the environmental crisis was interwoven with the other forms of reflection. Critical reflection in these workshops reflected an engagement with the underlying values, power relationships and social purpose of schooling -- all aspects which influence teachers' daily practice and the kinds of decisions they are able to make about their teaching (see 4.4.3.1, 4.4.3.2 and CR5.14). Using local environmental issues as a focus for planning and critical reflection on the role of schools in addressing the environmental crisis provided much opportunity for critical reflection on the socio-political, socio-economic and socio-ecological conditions in the local environment, and incorporated reflection on how these aspects influenced the contextual realities of the school (CR4.2). These reflection sessions were not pre-planned or pre-structured, but were an integral part of the discourse around the task at hand (see 5.5).

Inherent in the reflection process is the interweaving of dialogue and action which has as its purpose the challenging of the rhetoric-reality gap between socially critical environmental education and the dominant social order reflected by and sustained through the traditions of schooling (Hart 1993:118; Stevenson 1987; see 2.2.4). Hart (1993:117) argues that the contradictions between socially critical environmental education and schooling have not been seriously engaged with by environmental educators. This research project has emerged as a

reflexive response to address aspects of this rhetoric-reality gap. The assumption embodied by the RDDA model that teachers are less able or not in a position to develop adequate curriculum materials has been challenged through a socially critical, action-based process of research linked to the development of materials with teachers. Hart (1993:117) argues that, ultimately, action research as a methodology must be evaluated within the paradigmatic orientations that appear to characterise the field of education. According to Stevenson (1987:73) critical and action-oriented goals to environmental education creates a challenging task for schools. Historically schools have been cast in the traditional education paradigm, which is concerned with the distribution of propositional knowledge, and were not intended to develop social inquirers, independent and critical thinkers (teachers or students), problem solvers, or develop active participants in decision making (Hart 1993; Posch 1991; Schreuder 1995; Stevenson 1987). Socially critical environmental education "... imposes a revolutionary purpose on schools - one which intends to transform the values that underlie our decision making through educational practices which can only be described as action research" (Hart 1993:123). In the same manner socially critical environmental education imposes a revolutionary purpose on teacher education and materials development processes. Hart (1993:119) argues that in developing environmental education programmes or materials equal attention should be given to the position and contextual realities of teachers, and that

> ... (I)t is apparent that environmental educators have focussed their attention on the development of environment-related goals and have neglected to probe deeply enough into pedagogy, particularly at the level of the teacher ... *environmental educators have not focused on the real life working conditions of teachers, their perceptions about change and the support system needed to facilitate change in teaching methods demanded by new curriculum ideals and materials* (Hart 1993:119, my emphasis).

I argue, through this research project, that in working with/in and through notions of change and social transformation in schooling, educators (through collaborative reflective practice) need to begin rethinking how schools are designed, how teachers work and how school systems operate, how teaching and learning are pursued and what goals for schooling are sought (Darling-Hammond 1992:1, cited in Goodman 1995:1). The task of environmental educators is therefore not only to work at developing environmental education programmes with teachers, through processes which support teachers in creating change at schools, but a more fundamental and

reflexive engagement with the change process itself (see 5.7) and the ideals of the change process for schooling. Goodman (1995:2,3) notes that

> ... (m)any school reform proposals and projects, while making technical changes, actually reinforce the underlying values, power relationships, and learning experiences embedded within the conventional ways of educating children. In such cases the reforms remain at a 'surface' layer of meaning. The core assumptions, predispositions, and values about a school's purpose, roles and responsibilities - which legitimise the manifestation of organisational structures, human actions, and curriculum content - remain hidden from deliberative scrutiny ... These changes fail to make a difference in the intellectual lives of the teachers and their students ... [and] result in what Margorie Roemer (1991:447) calls 'change without difference'.

To be truly transformative teachers, principals and other members of the school community need to be actively engaged in visualising the type of society we wish to create which, by implication, includes a concern with environmental issues. Goodman (1989), along with other contemporary educators (Alexander 1990; Beyer 1988; Greenall Gough and Robottom 1993; King and Van den Berg 1994; Posch 1991; Stevenson 1987; Wood 1988), argues that transformative efforts based upon a vision of schooling for democracy (and sustainable living) offer one example of how our educational purpose can be broadened beyond the principles of social functionalism, racism, separatism, elitism, productivity, individualism, academicism and expertism which have dominated school culture in the twentieth century.

During the first phase of this project a participatory orientation to the trialing, testing and further development of the We Care Primary pilot materials represented a change initiative which could be characterised as 'change without difference'. However, through ongoing inquiry into the nature of the change and through a radical review of the orientations, assumption and processes of change, phase two actively challenged the concept of participation in reform initiatives and set out to develop appropriate conditions for authentic teacher participation in the research process. This enabled a situation where more time and energy was focused on the processes of interaction between teachers and on the challenges of change and transformation rather than on the trialing of materials. It was through the experience of authentic participation and ongoing interaction and critical reflection on ideas and activities that further materials were generated. It also became clear that much effort, time and the building of relationships was needed to

enable critical and reflective practice with teachers, and that initial contact needed to be maintained over a period of time if the process of developing change in classrooms was to be sustained and become transformative. A further insight gained, which is supported by Hart (1993:119), is that "... *a key aspect of teacher change is teacher participation*" (my emphasis). To extend Hart's insight, I would argue that for teacher change (and by implication change in classroom practice) to be sustained, a key aspect of teacher change is *authentic participation in an ongoing, supportive process of interaction, critical reflection, dialogue and action around practice and issues of common concern.*

### 5.4.4 Sustaining the process of teacher participation

Fullan (1991:63) comments on the deceptiveness of participatory orientations to change, and notes that authentic participation should be a process which is ultimately made available to all teachers for any change to become meaningful and lasting. His comments have specific meaning for the We Care Primary materials development project, as authentic participation of teachers, through the limited capacity of the research project, could only be accessible to a limited number of teachers, although significant attempts were made to broaden the network of participating teachers over the three year period (DF56 see also 5.6). He comments that

> ... for example, the production of provincial curriculum guidelines ... or school district curricula decision making usually involves selected participants in work groups ... while selected teachers thus do develop materials, once the materials are ready for use they are no more meaningful to rank-and-file teachers (who are seeing them for the first time) than if they had been produced by publishers or district curriculum specialists. It is the *members of the committee* who have developed their subjective meaning of the change not anyone else. I am not saying that participation is unimportant, only that it must be seen in the context of the early stages of a very long process of mobilisation and meaning. It might be more helpful ... to conceive of participation as something that begins during initiation, and grows and grows through action ... (Fullan 1991:63).

For the We Care Primary materials project to 'grow through action', support for the '... long process of mobilisation and meaning ...' was needed. Fullan's concern for *all* teachers to be involved in change initiatives is echoed by Hope and Timmel's (1986:3) comment which notes that "... participation of people in shaping their own lives and to write their own history, means they need to speak their own words - not the words of someone else". A process of extending

the initial participation of teachers in this project, given the emphasis on longer and more sustainable contact sessions, would only be possible through the formation of partnerships with the existing infrastructure (which included the subject advisory service and other INSET providers, see 5.5). The development of appropriate INSET policies and mechanisms, which can create the conditions necessary for teachers to participate in the processes of classroom change and transformation, has been the focus of many policy initiatives and debates (ANC Policy Framework 1994; Hofmeyr and Jaff 1992; NEPI 1992/3; Versfeld and Robinson 1994) and continues to be viewed as an enabling condition for the development of environmental education in junior primary classrooms (see 4.3.4.2). To illustrate these perspectives on participation and change within the We Care Primary project, I describe two 'stories' which illuminate the process of materials development which emerged during the phase two inquiry (see 5.5). These 'stories' of materials development provide insights into further 'stories' (see 5.6) describing the extension of the project through partnerships aimed at exploring the relationships between curriculum development, materials development and INSET, to enable the extension of teacher participation in the change process initiated by the We Care Primary project (see 5.6).

## 5.5 DEVELOPING ONGOING MATERIALS FOR THE WE CARE PRIMARY PROJECT

Responding to the weaknesses of the We Care Primary pilot materials through the ongoing development of new materials (see CR5.16), provided the opportunity to work with a diversity of teachers through a number of 'workshop series' (see 5.4) which had an increased emphasis on school-based materials development around local issues (see 4.3.4.2). The focus of the materials development process in this phase was on *the generation of new materials* and not merely trialing, testing and redeveloping materials as in phase one. The research activities were no longer predetermined, but were more emergent within the social processes of interaction taking place at schools with groups of teachers.

Through a range of workshop series at different schools (see CR5.9) over a two year period, frameworks and content for a variety of materials were developed around a range of local environmental issues (for example street safety, decision making, water, violence and waste

management, see CR5.16 and Appendix 4). A range of new We Care Primary booklets were developed through ongoing teacher participation as well as trialing and testing of the materials (see CR5.33; figure 5.2). Due to the lack of time for teachers to 'write' each of the books in the kind of detail needed for publication, a group of authors were invited to become part of a participatory authors project[8] and through this process, became participants in the We Care Primary materials development process (DF76, AM32, CR5.34). Figure 5.2 indicates the development process of a We Care Primary project pack. The development of each project pack involved ongoing cycles of planning, acting and reflecting on the materials being developed, and on the materials development process. Each project pack involved a number of teacher workshops (between one and six, depending on the group), workshops and discussions with authors, liaison with the publisher and editor on an ongoing basis and liaison and consultation with artists, designers and others involved in the production of the We Care Primary project packs.

To recount the 'stories' of the development of two of the We Care Primary project packs[9], I draw on workshop data (DF66, DF68), the different draft versions of the materials (DF74), my research journal, diary and field notes (DF103, DF104, DF105), interview data with the participants (DF60), and incidental video material (DF78, DF53).

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[8] A participatory authors project was launched in 1993 to help 'translate' the teachers ideas and project pack frameworks drawn up during the workshops into well written texts. Although a number of workshops and meetings were held with this group, the project suffered from too little attention to the co-ordination of the authors, and was resurrected in 1995 through a small research project on author support in the We Care Primary project (A. Greeff, B.Ed. assignment, University of Stellenbosch, November 1995) with the specific aim of supporting novice authors to develop the skills and experience necessary for writing educational materials for junior primary environmental education. This project is significant when seen in the light of recommendation seven of the Sached/NECC Conference on 'Publishing for Democratic Education' held at the end of May 1993: "Recognising the skills shortage experienced in the publishing sector, educational publishers should commit themselves to increasing access to training in publishing, particularly for those - mainly black people and women - who have traditionally had limited access to publishing training or the publishing industry" (Kromberg 1993:179).

[9] Through an ongoing materials development process over a period of three years (1993-1995) a series of ten project packs and a teachers book was developed to extend the first We Care Primary materials (see figure 2.3).

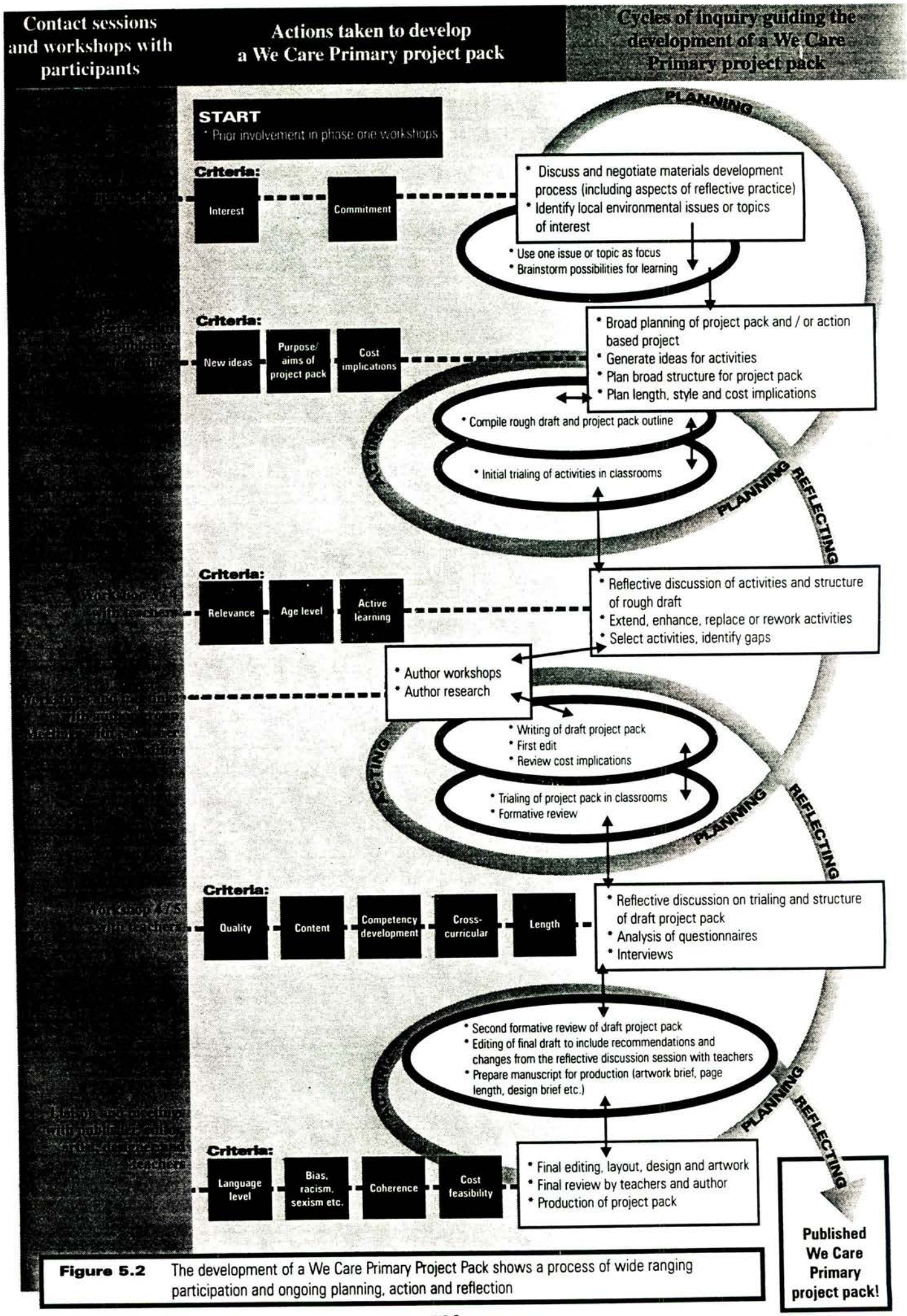


**Figure 5.2** The development of a We Care Primary Project Pack shows a process of wide ranging participation and ongoing planning, action and reflection

### 5.5.1 Story one: Developing 'The Right Choices' project pack

Two teachers from S4 had attended the We Care Primary pilot materials workshops held during phase one at the Cape Town Teachers' Centre. I was pleased to receive their response to my letter of invitation (CR5.18). I did not prepare any 'work' for the first workshop session, but took copies of the pilot materials with me to use as a focus for our discussion. There were six junior primary teachers at the school and the school seemed to have a friendly, open atmosphere and did not appear to be too formal or over-structured. The teachers were friendly and we immediately were at ease with each other. I started by briefing them on what had happened with the project since I last saw them, and they seemed pleased that the project would be ongoing. I talked through the process of action research, and we discussed what the process would mean, and how they could try out processes of reflection-in-action.

They asked me to 'talk through' the different concepts used to structure the pilot books (see figure 4.2), and the two teachers who had been at the phase one workshops noted that they were finding the booklets a useful source of ideas. They were interested in the use of concepts as an approach to environmental studies and I was able to give them some information on how the concepts were being used (as a result of my brief involvement with the CED research project). We then spent time talking about the ongoing nature of the project, and the kinds of materials and activities they would like to see as part of the project (CR5.19).

Their main concern seemed to be to provide more ideas, and they wanted to work on the development of ongoing activities which would be easy to use for teachers. The teachers were also adamant that the booklets should be theme-based, and not concept-based, as they were more familiar with thematic teaching[10] (see table 4.1 and 4.3.2.1). We then spent almost an hour talking about environmental issues, and conversation developed into a serious discussion on the socio-economic circumstances of the children at the school. A lack of parental care, child abuse, single parenting, poor health care, little or no access to literature, rude and disturbing manners and a lack of decision making and communication skills were some of the issues identified by this group. We reflected on the issues raised by the group, and through this were able to refine the issues until we decided on *decision making* as a topic which we could use as focus for a new We Care Primary booklet. Our time together had come to an end, and the teachers agreed to think about the topic during the week, perhaps develop some suitable activities, or just bring ideas about the issues to the next meeting. I also undertook to do some research to see whether I could find some suitable ideas which we could work with.

We spent the next session brainstorming the topic further and tried to define all the different

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[10] Retrospectively, after the development of the project packs in phase two, and through working on an ongoing basis with teachers who were familiar with thematic approaches to teaching, I realised that the first seven We Care Primary booklets would have been more accessible and 'familiar' to teachers if developed around themes and not the seven environmental concepts (see 3.2.1 & 4.4.1). The second phase We Care Primary booklets were thus developed with a thematic orientation. However, the conceptual approach which had informed the We Care Primary materials, was to add a conceptual dimension to the content of the theme-based booklets.

ways in which we could teach young learners about decision making. The conversation turned to a discussion on making decisions and choices, and through that we decided to call the booklet 'The Right Choices', and rather focus on the concept of *choice*. We developed some activities which could help young learners to understand the concept of choice. We talked about the significance of making choices for health, safety, learning, reading, kindness, sleep habits, television viewing habits, and how human choice affected the environment. After brainstorming a wide range of related topics, we narrowed them down to about twenty topics. Each teacher offered to develop or find an activity or two for the different topics and try them out in class before the next session.

Our next meeting focussed on the concept of active learning and learner participation and the teachers reflected on the activities they had tried out during the week. We talked about group structuring, and how teachers could work with groups to make active learning easier to deal with in classrooms. Comments such as "... our children are not really used to working in groups, ... it is quite hard to keep all the children involved, ... the children really enjoyed working together on the activity, ... they definitely learn more when they are active, ... I always find that giving the children a question to focus on helps them work together better ..." illustrate some of the reflections and discussion around developing activities for the project pack. I found at this stage that it was important for me to offer input on the development of process skills, as teachers did not seem to be familiar with many of the recent discussions on the development of process orientations to teaching and learning. I shared some of the work that I had been doing with the teachers at S6, and recommended that they make an appointment to visit S6 to see competency-based teaching in action. I also left them with the rough booklet I was working on with S6 (CR5.14) and recommended that they 'try out' some of the suggestions. We reflected on how these ideas could add to the activities which they had tried out for the project pack, and three of the teachers felt they would like to adjust their activities and trial them again if necessary. Our next workshop was focused on their concern for cross curricular activities in the resource. We worked through some aspects of integration and discussed how we could integrate languages, numeracy activities, poetry and songs into the resource (see CR2.12). After discussing a wide range of possible activities, we briefly looked at a broad framework for the booklet, and which of the activities would be useful to include.

Throughout the workshops I tried to capture the discussions and ideas by writing field notes, drawing rough schemes and, where possible, I taped the discussions. I used these notes, together with any written work put together for or during the workshops, to compile a rough draft of 'The Right Choices' booklet. Once the rough draft was ready, I made an appointment to discuss the rough draft with the teachers. We made a number of changes to the structure and one teacher had tried some activities to help teach the topic of child abuse, and suggested we include some of these activities in the booklet.

The next phase was to translate the rough draft into a functional text. I arranged a workshop with the project pack authors to brief them on the history of the project, on ways in which to interpret the teachers' work, and how to create more comprehensive texts. I also introduced them to the education research library, and encouraged them to use the library to support and enhance the ideas initiated by teachers. We met a few times as a group to share and discuss problems and other issues pertaining to the writing process.

Once the text was complete, I returned the materials to the school, and asked the teachers to try any of the activities which had been changed significantly by the intervention of the author. I made another appointment to visit the school and requested a semi-structured focus group interview with the teachers (I6, 26-08-1994). At the same time I circulated the draft project packs to other teachers who had participated in the marketing workshops (CR5.17, CR5.20) and had indicated an interest in trialing some of the project packs (CR5.21). During the interview session I asked the teachers for final reflections on the draft materials and some minor changes were made. I also asked the teachers to reflect on the process of materials development which we had followed (see 4.3.1.3). Teacher comments (I6, 26-08-1994) reflect some of the tensions inherent in school-based change:

> I liked the way we could get time to talk about these issues, they are really important and we hardly ever spend time discussing how we can use these issues as part of our teaching, we always seem to be complaining about the children and the parents, but this has helped me to see that we should think of how we can build these things into our lessons (T4);
>
> Thinking carefully about how we did the activities in our classes helped me to think more about group work, and it helped me to plan more activities which involved the children in the activity (T6);
>
> People always think it is easy for us to change the way we teach and do active learning all the time, but I can tell you it isn't so easy - especially not when we have over 38 in a class who can't even listen properly ... (T2);
>
> We really have to find some way of educating the parents. It will not help us to do all these lessons if the children go out of the classroom into homes where none of these things matter, perhaps we should include some worksheets or information sheets for the parents in these booklets (T3).

Once the teachers had finally 'approved' the draft manuscript, I edited it to include final changes and suggestions and handed the manuscript to the editor at Juta Educational Publishers, who then continued with the production process. The manuscript now needed to be edited for language usage, signs of bias, sexism and style. A reflection and a review of the format of the redeveloped We Care Primary materials (CR5.22) provided further insights which were useful to determine a better style and layout which would enhance the final product. The project packs were designed to have a more user-friendly content page. The objectives and introduction pages were compiled from the workshop discussions with teachers on the issue chosen as a focus (CR5.23); the page layout was designed to be more readable (in columns); and the artwork was clearer, designed to complement and extend the text (CR5.24) and not serve only as an illustration. The resource page included at the end of the pack was more comprehensive than the resource lists provided in the first We Care Primary materials, and did not consist only of environmental education materials, but included a wide variety of references to stories, non-fiction material and other useful addresses and information(CR5.25).

### 5.5.2 Story two: Developing the 'Recycling' project pack

A similar process of materials development was initiated through S5. The principal from this school had already attended five of the We Care Primary workshops (W9, W21 and three sessions at S11). She was very anxious that I come and spend some time at her school, as she had just moved to a new school and was anxious to develop the school ethos to reflect the local communities' concern for environmental issues. She had seen the slide show (see 4.3.2.3) and wanted to develop an environmental education project which would involve all the teachers at the school, and start development of their school grounds into a resource for learning.

The principal at S5 invited the pre-primary school from the nearby township to join the process of materials development, as they had not worked together before, and wanted to begin a process of building relationships with neighbouring schools. We went through a similar process of issues identification, and eventually we decided on the topic of littering / waste / recycling. The reason for this choice was that it represented a problem common to the local area, and was a shared concern. The discussion also centred on the need to address the problem, and the need to empower teachers to act on the problems of littering and waste. The teachers raised the issue of a need for, and access to, relevant and useful information about recycling. They thought it would be useful if we could work at combining helpful information with some creative ideas for activities that would be suitable for young learners. Instead of just developing a range of activities, these teachers chose an action-based approach to develop the resource materials and suggested launching a large recycling project which we could use as a source of ideas for recycling activities. These workshops were being planned at the same time that the We Care Primary pilot materials were almost print-ready. I gave them copies of the semi-final drafts of the redeveloped materials to work with, as there were quite a number of activities on recycling in these booklets. I suggested that they consider these activities as possible starting points for further activity development, and as a resource to help plan the project. This would also prevent repetition of the activities contained in the first set of We Care Primary materials.

During the next session we discussed the planning which they had started for the project and I found myself playing the role of 'critical friend and advisor', commenting on suggestions, offering alternatives, and stimulating further discussion on the possible potential of such a project. Our discussion returned to the need for information on recycling, and having collected some of the available recycling information, I was able to distribute it among the group for consideration and inclusion into our resource. We decided that the information in our resource should be simple, accessible and useful, and not be "... overburdened with words and useless information ..." (DF68). The teachers undertook to go through the information during the following week, and select those parts which they felt to be useful to pre-primary teachers. The teachers were ready to start their recycling project and we discussed the first phase of their project. I returned the following week and we reflected on the activities which they had started doing and considered the activities critically from the perspective of making them useful to a diverse range of schools. I kept notes on the discussions and asked the teachers if they could give me samples of their lesson plans to use as capital for the author who would be working on their material once we had developed the ideas and structure of the booklets. We looked at the information the teachers had selected and then planned a basic structure and framework for the project pack (CR5.26).

The recycling projects at the two schools progressed well, with teachers, parents and children becoming enthusiastic about the activities at school. At the time the project was being developed, we made contact with 50/50, a national television programme, who were to cover the launch of the We Care Primary materials by making a short programme on the project activities (DF54). This group were very enthusiastic to participate, and I thought it would make a nice 'story' as two schools were co-operating to develop an environmental education project which focussed on a common local issue. We therefore discussed which of the activities from the first set of We Care Primary booklets they could use for the film shoot, and we also discussed a range of alternative activities. I left them to prepare for the filming, and was pleasantly surprised at the outcome. The footage was sent to us by the SABC after the programme had been flighted, and we decided to use the film as data for reflection and a source for extending the recycling project pack. Some of the activities which the teachers developed for the filming were not included in the previous project framework, and after reflection, we included some of the activities. Through using the video data, we decided to include the song which one of the teachers composed for the filming, and we included a 'how to make' section for musical instruments to accompany the song (see CR2.27). The development of this resource can be described as having a meaning making orientation, rather than a meaning taking approach (Uzzell 1994:2) and reflected the epistemological stance of this project i.e. that knowledge is socially constructed (see 3.3.1).

However, the project did not end there, and regular contact with the school ensured a similar process of trialing and reflection which improved the project pack as it went through the various phases of authorship, editing, artwork and design (see figure 5.3). When I took the final draft round to them almost a year later, the initial project seemed to have had a catalysing effect. Comments from the teachers (a year later) reflect ongoing engagement with environmental education as part of their school curriculum (I2, 29-09-1994). Their comments and the video material (DF78, DF53) testify to the ability of young learners to be environmentally literate, to take environmental action, to become actively involved in environmental problem solving and to be critical thinkers:

> ... before we never worried about the concept of conservation, now we're doing a lot with it ... we're putting more emphasis on it ... our kids are more environmentally aware than before ... we've been carrying on with the recycling as an ongoing thing, and we've done other projects with our indigenous garden, the danger of UV rays ... the project we did with you was just a start ... (T4);
>
> ... I think it's going to become more and more important for schools to have good recycling projects ... this can teach teachers a lot ... there is so much that schools can use (T5);
>
> ... one can create such a rich teaching environment with recycled materials ... teachers don't have to be without resources ... you can make anything from musical instruments to mental play games to quiet play games ... you can produce things for each session in the day ... (T3);
>
> ... everything that you do, you can actually include conservation and cause and consequence as concepts ... we do nature things, but we also think the human elements

> or human impact is quite important, because of the interrelationships ... we like to use concepts in our themes because they help you tie everything up very nicely (T6);
>
> ... it's amazing how aware they are ... we went to the harbour the other day and we saw many things which were interesting and wonderful, like the seals and the boats ... and the one child said 'look at all the bags, look it's so dirty' and for days that's all I heard about - the pollution in the sea (T8);
>
> ... Yeah well yesterday Justin told me that he went to Shoprite with his mom and he saw such a mess there and he asked me if we can't go with a class down to Shoprite and get all the children to clean up (T6) ... he asked me the same question (T4) ... he asked me too if I could go with him to Shoprite to get the messy papers for our recycling boxes (T3) ... in another class he kept asking the others to please clean up the floors (T6) ... it shows you how aware and concerned they've become, which they've never really been before (T7);
>
> Feedback from the parents was that the children were putting pressure on them to recycle at home. When mommy throws things into the dustbin, the child dives into the bin and hauls it out and suggests an alternative use for it. It is a very good age to get the children involved in recycling things (T2);
>
> ... and as T2 said just now, its made the parents aware, and this is the age to start ... since we've been working with this project we've found that our children are much more aware of recycling and conservation and of the importance of it than they've been in the past ... you cannot start too early ... (T5).

These statements and the teachers' comments on the role that young children could play as catalysts of environmental change, reflect the role that Uzzell (1994:2) identifies for schools in environmental and social change:

> ... schools will have to be seen as an active agent in the creation of change rather than a transmitter of information or values ... an action oriented approach ... will support children becoming catalysts of environmental change by encouraging them to become active citizens in the wider community.

It appeared that an action oriented approach to curriculum development and teaching, and an active involvement in addressing local environmental issues had the effect of mobilising teachers to become critical, and take action to help solve environmental problems through their teaching. Through their action, and possibly through the development of the resource which emerged from the project action, they could make a contribution which could catalyse some change in other classrooms. Reflection on the action-based project which created the framework and activities for the recycling booklet, indicates the value of developing environmental education resource materials which are based on a socially critical orientation to environmental education:

> ... we definitely need a recycling depot near here ... there was one, but unfortunately it's changed ... we do not have a place to put all the junk we are collecting ... the children are very aware of that too, because they couldn't bring tins because there was nowhere to

take the tins ... we haven't even got a tin squasher here ... (T6);

... well, I think we should approach the council, they have to be involved in a full recycling project ... recycling is no good if it starts somewhere in the middle and ends somewhere in the middle ... it's actually got to work all the way from the house back to the factory ... the whole thing should function (T8) ... I've heard that the factories don't really do much with the recycling stuff, because recycling is too expensive ... (T2);

... through this other teachers will be getting ideas that actually work, that are functional and that have been tried and tested with pre-primary kids (T7) ... teachers are also more inclined to work with little books like these don't you think? ... If you have one thick book with all these ideas and themes in you're not really going to look at it, but now with these little booklets with the theme you're working on you can keep it near you, and then just choose and adapt activities easily, and then at least you have a booklet on a specific theme with lots of ideas in it (T6) ... it's very practical - it works ... it's something you can really use ... (T4).

These comments reflect some elements of catalytic validity visible in the second phase of the project (see 3.3.5.4). A further indication of catalytic validity is the video which one of these schools made to advertise their school (DF78). In addition, the principal of S5 was approached by the regional subject advisor to do a presentation on their involvement in the We Care Primary project at the annual pre-primary teachers congress in the Southern Cape (CR5.28). Her story generated interest from a number of other schools in the area (CR5.28) and thus enabled the We Care Primary network to extend.

### 5.5.3 Reflections on the development of the We Care Primary project packs

These two stories are representative of similar processes which were initiated and supported to develop a set of ten project packs. The development of these project packs reflected a general concern among junior primary teachers about the nature and extent of socio-ecological issues facing young children (see CR4.2 and 4.3.1.4). This concern reflects both the broader impoverished socio-economic and socio-ecological conditions of the majority of South African children, and how these issues impact on the quality of teaching (see 2.4.1 and 4.3.3.2). The range of issues identified by teachers were predominantly socio-economic or socio-ecological in nature. This indicates that curriculum development and action-based projects which work towards understanding and addressing (wherever possible) the many socio-economic and socio-ecological problems should form a high priority in environmental education programmes in schools (AM28, workshop report, 16-09-1994).

Working with teachers on real, pertinent issues in schools and/or local communities provided us with lively, focused work sessions and created an opportunity for the teachers to engage in curriculum development, problem solving and creative activity development which would contribute directly to a process of taking action, through their teaching, to address an issue in the context of their school environment. The development and trialing of activities provided a good focus for developing the skills of critical reflection needed for reflective practice. Developing resource materials through this interaction provided an added dimension to the process. Teachers were concerned not only for themselves and their schools, but for other teachers faced with similar dilemmas. They often wanted to know from me whether other teachers were experiencing the same kind of issues and problems (see 3.4.3.1). They felt it to be a worthwhile project to be engaged in, reflected by comments such as

> ... I am sure other teachers also suffer from these problems, ... it will be really nice to see some of the booklets the other teachers are developing, ... I think these books will be useful to teachers, because, you know, when we go to these teachers' meetings, I often hear teachers moaning about the children and how they can't control themselves, ... at least this work we are doing won't be wasted if it becomes a book, ... it is much better to work like this on problems which concern us (DF103).

Hope and Timmel (1986:3) write: "Participation means dialogue. Dialogue is based on people sharing their own perceptions of a problem, offering their opinions and ideas, and having the opportunity to make decisions or recommendations." Through the manner in which the phase two workshops developed into sessions in which teachers *talked about* the issues concerning them, *thought about* ways in which they could address the issues through their teaching, and created and *tried out* some of the activities which could help solve real-life issues, authentic participation and collective critical reflection on the process of materials development was occurring (see figure 5.2).

The ongoing follow-up process of trialing draft materials (with the teachers from S4, S6 and other schools) and eliciting comments on style, illustration and other aspects helped to create a better quality resource for junior primary teachers (see figure 5.2). However, as materials developers, we (the teachers, authors and I) realised that the materials could never be 'perfect',

and that the resource would always have the potential to be changed, adapted or redeveloped, depending on the context in which it was being used, the teaching style and interests of the teacher using the materials, the social and educational experience of the learners and many other factors which prevented materials from becoming 'perfect tools' to engineer change (AM30).

An aspect of the materials development process which warranted further inquiry, and which emerged during the development of the phase two materials, was the implication of an epistemology which recognised the social construction of knowledge for materials development. During this phase a tension between materials in process and materials as products emerged, linked to the realisation that all knowledge is partial and that the content and nature of the materials could change with each encounter and review of the materials. As co-ordinator of the materials development process I realised that at some stage the resource would cease to be 'in process' and would become 'a product'. It was not easy to determine the extent and length of time needed for the social interaction necessary for the development of resource materials. However, as the second phase materials were planned as part of a national publishing company's publishing programme, the deadlines and time scheduling of the publishing industry helped to determine the cut-off time for the ongoing trialing, refining and re-working of the We Care Primary pilot project packs. The time consuming nature of participatory materials development exposed a further tension between the traditional RDDA model traditionally used by educational publishers and participatory processes of materials development (see 4.4.2). The Western Cape Materials Development Forum recommend that materials developers and publishers weigh up this tension and the strengths and weaknesses of group and individual materials development, and make decisions according to the requirements of the context in which the materials are being developed, and the purpose and nature of the materials (Western Cape Materials Development Forum minutes, 27-10-1994).

A further aspect of importance which emerged during the materials development process was the affirmation of teachers' capacities to develop new materials which could contribute to classroom change. The ongoing author support programme which included new authors drawn from We Care Primary INSET programmes (see 5.6), provided a further focus for inquiry into capacity building and teacher involvement in further dimensions of participatory materials

development.

A change in orientation noticeable during this phase was the way in which the We Care Primary materials were used in workshops. During the first phase, the pilot booklets were the focus of the workshops, with teachers being asked to trial and test the materials. During the second phase of the project it was the development of curriculum ideas and activities which was the focus of the workshops, with the We Care Primary materials being used as support for this process (see 5.6). Instead of being the object of the research, the materials became a useful tool and support for critical reflection on the nature, format and style of activity development and curriculum content (CR5.29), used to inform further materials development. This reflects Taylor's (1995:6) observation that "... resources can support reflection and action to enhance people's capacity to engage with environmental issues". In the same way, the We Care Primary materials were supporting an engagement with local environmental issues and issues of educational transformation in junior primary education. The ongoing contact and support needed for the process of materials development, made visible in this phase, provided further insight into the potential role which innovative materials and materials development processes could play in school-based curriculum development and INSET.

## 5.6 CURRICULUM DEVELOPMENT, MATERIALS DEVELOPMENT AND IN-SERVICE TEACHER EDUCATION

### 5.6.1 Forming partnerships in change processes

Recognising my own limited capacity for sustaining ongoing interaction with teachers, the limits of my position as temporary researcher at the university and the limitations of a small project development budget, I realised the importance of forming links and partnerships with the existing institutions to ensure ongoing action and engagement with processes of school-based change (Fullan 1991:63, see 5.4). As I attempted, through the establishment of conditions for authentic teacher participation, to respond to the contextual realities of schooling, to work with teachers to find answers to some of their questions, to provide support for them to clarify their own practice, and to reflect critically with teachers on the process of materials development, I

realised the growing interaction and interdependence between curriculum development, materials development and INSET in the We Care Primary project.

Throughout the research project I was confronted with the 'authority' of the education department and the need to have the project 'sanctioned' (DF105). A journal entry reflects the dilemma of being caught between an education department with little legitimacy, and the realities of how the legacies of authoritarianism were still influencing the thoughts and practice of many teachers:

> ... at the workshop today I was asked again whether the department knew about this project. I assured the teachers that I had made contact with all the education departments and that they were all aware of the project. They seemed to want it to be officially approved. However, the level of political literacy among these teachers is very high, and when I talked about the political changes in broader society with them, they were very firm about their belief in the principles of democracy. It seems that their almost traditional dependence on authority is a habit which belongs to their school lives, while the world outside the school is coloured with different tinted glasses. Perhaps this is a good example of what is meant by 'false consciousness'. This tension led to a discussion on authority in schools, and we talked about the traditional 'checking up and criticising' role of the subject advisory service, and how it should be changed in a new dispensation. Some mentioned that their subject advisor was more lenient, and that it appeared that the stringent authoritarianism of the past appeared to be changing, but that a new role for the subject advisor had not been defined as yet. It was an interesting discussion, and reflected how we are all caught between the 'hither and the thither' in the change process surrounding us. It provided me with yet another perspective on broader societal changes, and it made me realise how deeply the legacies of apartheid ideologies are embedded in our daily lives, and the related challenges for real transformation. I think that real transformation is going to be a long, hard process if we really want to fundamentally challenge the entrenchment of the legacies of apartheid in our society, our unsustainable lifestyles, our poor education system and all these social ills we seem to be stuck with (journal entry 27-05-1993).

I realised that for the potential of the We Care Primary project to be maximised as a change initiative, I would need to explore further the possibilities of forming partnerships with education departments. Fullan (1991:63) argues that for change initiatives to be successful, wider participation of teachers should be provided for through continuous assistance and follow-up:

> ... if local facilitators work just on a one-to-one basis, they will have limited impact because they will reach only a minuscule proportion of teachers ... if they are [working]

> in an [area / province / system] that does not have a coordinated plan for the management of change, it will be extremely difficult for them to set up activities involving the continuous assistance and follow-up so necessary to support change in practice.

McFadden (1992:77) argues for teacher participation in curriculum development and refers to the inherent tension in 'top down' and 'grassroots' processes of change, by noting the key role that teachers play in the realisation of educational change:

> ... those in a position to formulate public policy in education imagine they have more power to effect change than they may actually have. The manufacture of artefacts, including school structures and curriculum documents, can be commanded; curriculum change probably cannot. From a minister of education to local curriculum committee members, real power to change educational practice is probably limited primarily to providing leadership and support to teachers.

The role of the teacher in educational change is emphasised by Fullan (1991:117) when he argues that "... educational change depends on what teachers do and think, it's as simple and complex as that ...", and in the light of these insights it seems logical that, given the condition in which the majority of South African teachers have to teach (see 2.4), *transforming the conditions of teaching needs to be at the heart of any serious transformation effort*. Inequality in education is not likely to be addressed at the local level, either because of discrimination (intended or not) or because of lack or resources for developing and learning to use changes. The tension between change which is 'top down' and 'grassroots' becomes real when seen in the light of the fact that acceptable solutions are not likely to be designed at the policy level, because variations in local situations and priorities require variations in solutions and/or because local institutions vary in their commitment and capacity to implement new policies (Davidoff 1993; Fullan 1991:288). The government and the state education structures have a legitimate and essential role to play in educational transformation because problems of equity and program quality are unlikely to be resolved at the local level. Given these tensions, it is obvious that the process of educational transformation in South Africa needs to be conceptualised as the formation and operationalisation of productive partnerships between the state and local initiatives which can provide both equality in educational provision and the leadership and support for teachers to become reflective practitioners, develop their capacity to engage with change, and transform classrooms and teaching practice in such a way that education can

become more relevant to the learners.

The formation of constructive partnerships with subject advisors at education departments in the Western Cape became an important focus in the second phase of the We Care Primary project. The formation of these partnerships emerged largely through my involvement with teachers. A principal and group of teachers at one of the schools where I had been working (S2) recommended that I meet with A1, curriculum planner at the Western Cape Education Department (WCED)[11]. *Story one* tells of a productive partnership, which through interaction and ongoing reflection, dialogue and working together with teachers on the process of school-based curriculum development (DF89, DF90; see figure 5.3), led to the formation of the Western Cape Junior Primary Forum (DF94, CR5.3), a number of workshops with the subject advisory service (DF92, DF138, DF140), participation in the junior primary curriculum development committee for environment studies (DF141, CR5.1), and the 'building of bridges' between education departments in the Western Cape. It also led to the compilation of a teachers' book, based on our collective experience of participating in and developing teacher workshops. The teachers' book is aimed at providing support, guidelines and ideas for teachers to engage in school-based curriculum development with an emphasis on socially critical, active learning processes (DF91, CR5.32).

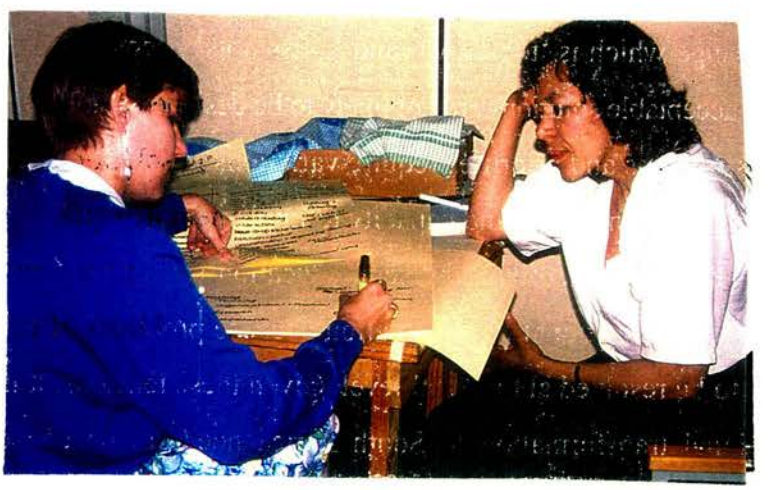

*Figure 5.3* *Reflecting on curriculum development processes and planning for ongoing workshops with A1, curriculum planner and subject advisor (WCED)*

[11] The WCED was formed through an amalgamation of the ex-DET, ex-CED and ex-HoR education departments after the 1994 elections.

This partnership was extended through further interaction with another subject advisor, A2 (WCED). Through working with these two subject advisors, I was able to participate in the development of INSET programmes and ongoing materials development research. I was also able to establish the role of resource materials as support for change in legitimate and ongoing INSET programmes aimed at school-based curriculum development. *Story two* tells of a pilot project aimed at the development and provision of ongoing, sustained support to a group of junior primary teachers for developing environmental education curricula. This process of INSET, in partnership with the WCED subject advisory service, affirmed the role of teachers from historically disadvantaged schools as legitimate and able curriculum developers (DF118-134), and highlighted the urgent need for equity in the resourcing and provision of facilities and opportunities in South African education.

The principle of forming partnerships to make further INSET, curriculum development and materials development research possible, became a 'way of working' in the We Care Primary project during phase two. Many initiatives were developed in partnership with subject advisors (DF85, DF140), non-governmental organisations (DF95, DF114, DF84), local school councils (DF82) and Colleges of Education[12] (DF88). Throughout these activities the role of the We Care Primary materials as a *support for curriculum development* (AM36, AM37), and as a *useful resource for INSET* (AM35, AM39, AM58), was confirmed. The We Care Primary activities were often used as a stimulant for planning hands-on active learning opportunities, and more often the principles of the project (CR2.14), the process of developing activities, critical reflection on the kinds of activities which are appropriate for teaching young learners (AM29) and the variety of knowledge areas and skills presented through the We Care Primary activities were the focus of curriculum development activities (AM39, AM37, AM35). The materials therefore became a useful tool for planning broader environmental education programmes and

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[12] Throughout the We Care Primary materials development process a concerted effort was made to involve Colleges of Education in an attempt to inform the development of environmental education programmes and courses in PRESET (pre-service teacher education). Workshops held at Colleges of Education were focused on the use of the We Care Primary materials for curriculum development, and follow up contact with the colleges indicated the value of the resource materials for PRESET, and especially for practice teaching (I4, I3, I15, DF88, DF53).

for developing classroom activities.

The theoretical assumptions of socially critical environmental education (Fien 1993a; see 2.2.4), and the guiding principles (Tbilisi 1978) and key characteristics (Fensham 1979) of environmental education establish particular kinds of curriculum and pedagogical practices as being necessary to achieve the stated goals (Stevenson 1987:74). Teaching and learning are intended to be co-operative processes of inquiry into, and action on, local or other real environmental issues. This requires that learners become engaged in processes of critical inquiry and participate in the learning process. Through this process, curriculum and pedagogical planning needs to be interdisciplinary, integrated and flexible enough to emerge in the context of the action or in the context of the local environment (Stevenson 1987:75). However, traditional curricula are often fragmented, reductionistic and consist of generalised loose bodies of predetermined knowledge which is 'presented' to learners through a variety of didactic methods, the most predominant pedagogical process being the teacher as dispenser of factual knowledge. Stevenson (*ibid*) notes that "... (t)hese contrasting practices suggest an extensive list of curriculum and pedagogical contradictions between environmental education and schooling".

Working *with in* the assumptions of socially critical environmental education as orienting framework, and with the internationally accepted principle that environmental education curricula should be emergent, interdisciplinary and focus on real environmental issues or problems (Fien 1993a; Greenall Gough and Robottom 1993; Schreuder 1995; Stevenson 1987; Tbilisi 1978), created supporting theoretical orientations for INSET programmes which were focused on integrated classroom practice and active, participatory pedagogies. During my ongoing experience of working with teachers on the development of materials, I had realised that teachers are able to, and interested in, developing curricula of this nature *given the opportunity* and given an *appropriate INSET process* (sanctioned by a legitimate education department), which would *enable authentic teacher participation and the development of reflective practice* and which would be *supported by ongoing interaction and appropriate materials over a period of time.*

In Chapter 2 (see 2.3.4) I developed an argument in favour of participatory curriculum and

materials development, and I drew support for this argument for teacher participation in school-based decision making from a number of current policy discussions and documents, including the 1995 White Paper on Education and Training. I have, through this research project, partly illuminated the role that innovative educational materials and participatory school-based materials development processes can play in the process of change and transformation. However, this research project has also made visible the *complexity of change*, and the need for sustained, ongoing interaction between curriculum development, teacher education and materials development. McFadden (1992:80) extends this argument by noting that:

> The separation of curriculum design ... and curriculum materials development ... is a fundamental flaw in typical curriculum development procedures. Rather, curriculum materials development should not be conceived as the execution of curriculum design; *curriculum materials development and curriculum design are mutual tasks that should be united in curriculum development projects; both the design and the materials should be tested [and developed] together.*

To illustrate the relationship between curriculum development, materials development and INSET, I draw on two short stories which support my position on forming productive partnerships in education to provide quality INSET programmes for teachers, which, in turn, may contribute towards transformation in the junior primary school phase (see 2.4.3).

### 5.6.2 Story one: Media centre curriculum development workshops

Through the teachers at S2 and C10 at the media centre, I was introduced to A1 who had begun a process of INSET on integrated classroom practice. She was planning a series of workshops for junior primary teachers on integrated teaching (CR5.35), and I was, at the same time, attempting to respond to teachers' requests for workshops on the thematic approach through developing a series of workshops on integrated teaching. As our work showed many similarities, we decided to work together on the development of a series of INSET workshops. The focus of these workshops was to develop teachers' capacity to develop school-based (decentralised) integrated curricula through involving them in cycles of ongoing workshops (CR5.30) aimed at the transformation of the junior primary curriculum. During the first workshop teachers worked together in groups (see figure 5.4) over a period of two days to plan environmental topics or projects, which they were to use as a focus for integration across the curriculum (CR5.31).

Fullan (1991:64) refers to the important role that resources play in supporting change processes and notes that "... people often underestimate the resources needed to go forward with a change". In addition to using the We Care Primary materials to provide ideas for the curriculum

development process, A1 and I planned to extend the resource network for the development of these workshops. Through our initial contact at the media centre we were able to make use of the resource facilities (desk top publishing, copiers, printing, photography and filming facilities) at the media centre during the workshops. Workshops were planned to include sessions in the well-resourced library (attached to the media centre), to introduce the teachers to the library, and to encourage the teachers to use the available resources and become members of the library. The first cycle of workshops were planned to introduce teachers to the concept of an integrated curriculum and to look critically at current thematic approaches being used in junior primary. The local environment became the focus for selecting relevant themes or topics to use for curriculum planning (CR5.38). The second cycle of workshops were focussed on activity planning with active learning and the development of learner competencies was the central focus (rather than just knowledge acquisition). The third and fourth cycle of workshops were planned to reflect on classroom change issues, classroom organisation and resourcing. These cycles of workshops were repeated for different groups of teachers, and were held at regular intervals over a three year period, giving teachers time to work together at their schools on changes and return to the workshops to reflect on those changes, and extend the process.

*Figure 5.4 Teachers at the media centre, involved in a curriculum development process*

Ongoing support was provided by A1 (their circuit subject advisor) who, in addition to the workshops on integrated teaching and learning, was providing further professional development workshops for the teachers whilst they were working at developing their junior primary curricula. The We Care Primary materials proved to be a useful tool for critical reflection on activity development. Teachers were asked to critically reflect on and analyse activities from the We Care Primary booklets, adapt these activities to suit their themes or topics, and plan new activities using similar principles for activity development reflected by the nature of the We Care Primary materials (CR5.36). Evaluation of these workshops reflected a need for whole school curriculum development. Teachers were concerned about the incongruency of having an action-oriented, integrated curriculum in the junior primary school phase, with the same fragmented,

reductionist, and structured curriculum (CR5.37) being the norm of senior primary teaching. Further evaluation sessions stimulated debate around educational concerns, such as the relevance of integrated classroom practice in an intercultural society. Whilst teachers recognised the time consuming nature of school-based curriculum change, they expressed their appreciation for being recognised as active participants in the development of their own curricula (revealing once again the tension between INSET and available time). An analysis (through triangulation) of the evaluation questionnaires, the oral feedback captured as field notes taken during the sessions and the video data taken during the workshops by the media centre staff (DF89) revealed that the teachers regarded the following aspects of the workshops as valuable:

- The exposure to, and their experience of, collaborative practical planning of themes, an example being the brainstorming activities to define relevant aspects of a theme;
- The opportunities for co-operative and collaborative sharing between teachers and schools (created through this process);
- The opportunity provided to spend valuable time (during school hours) on professional development;
- The recognition, given through the process of curriculum development, of the teacher as 'expert' with valid contributions to make for curriculum development and change;
- Empowerment of teachers to take ownership of curriculum planning and development within their schools;
- The confidence shown in teachers' ability to address the needs of the child, and to plan accordingly;
- The accessibility of a wide range of resource materials (including the We Care Primary materials) to support the curriculum development process;
- The opportunity to develop a range of resource materials which can be used in the classroom (DF 90);
- The breaking down of traditional and entrenched cultures of teaching and learning. (Integrated Studies workshop report, 22-10-1993).

The participating teachers were also concerned that this approach should not become another 'prescription' for teachers to follow. It appeared, from observation and also from general comments on the proceedings, that much more time was needed for in-depth planning, discussions on classroom management, the teaching of process skills, materials development, library research and record keeping -- all aspects which would be addressed through the various cycle workshops (CR5.30). However, the majority of teachers were inspired and motivated by the workshops, and reports from the field reflect an ongoing engagement and almost revolutionary change taking place among junior primary teachers as they redesign and redevelop the junior primary curriculum around a thematic approach, relevant to local environments and topics pertinent to the learner (Baxen pers. comm. 20-07-1995, I3, I5, I7, I10, I14, I15).

Recommendations from these workshops included the following:

- The need for ongoing support in which the subject advisory service should play a vital role. Adequate time should be made available for teachers to attend and participate in ongoing INSET, and ongoing opportunities for interaction, sharing and networking should be established. Teachers should also be given adequate access to good resource

materials, which support new teaching and learning methodologies (for example the We Care Primary materials);

- The need for ongoing and consistent professional development of teachers to understand and cope with the change process. Education should be viewed as a dynamic, changing process ensuring constant critical reviewing of teaching and learning content and approaches. Aspects of teachers problems such as stress, uncertainty, coping with practical realities and large classes, group dynamics and confidence building emerged as important focus areas for ongoing professional development of junior primary teachers.
- To facilitate and support teachers in becoming effective agents of change, support and attention needs to be given to: the breakdown and changing of reductionist curricula; change in authoritarian classroom management practices; restructuring of assessment practices and macro and micro planning within the school -- all aspects which would contribute to changing school and classroom cultures (Integrated Studies workshop report, 22-10-1993).

As circumstances and the general education climate (of the period 1992-1995) have been characterised by uncertainty and have not always been consistently supportive of innovation, the change process is experienced by many as a long and difficult one. As a result of this, and previous lack of opportunity to interact meaningfully with other teachers, teachers at these workshops continued to express a need to meet at the media centre to access the resources, and to interact with each other. Reports from the library note that their membership has increased considerably since these workshops, and that they often have groups of teachers coming in to work on their planning, using the resource materials available at the library. The We Care Primary resource is reported to be a popular resource for these planning sessions (Integrated Studies workshop report, 20-05-1994).

To extend further the support for teachers, A1 and I, together with the media centre and library staff, planned a three day workshop for subject advisors and college lecturers on the integrated curriculum (CR5.4), which eventually led to the establishment of the Western Cape Junior Primary Forum. This forum enables teachers to contribute to, and participate in, different working groups, all planned to address the many diverse issues affecting junior primary education (CR5.3) in the period of transition.

### 5.6.3 Story two: The Khayelitsha environmental education in-service teacher education pilot project

This INSET project was planned as a two-fold response. It was planned to respond to feedback and recommendations (CR5.39) from prior workshops with teachers in Khayelitsha (AM56, DF118) and Port Elizabeth (ex-DET schools; DF85; see CR5.40). The feedback and workshop sessions revealed the following aspects which were pertinent to environmental education curriculum and materials development in the junior primary school phase:

- Current environment studies syllabi and textbooks did not reflect children's experience of reality, and did not address the environmental or educational needs of children

(CR5.41, CR4.2);

- Education to address the myriad of socio-economic and socio-ecological issues identified by teachers during the workshop seemed to be a priority concern (CR5.41);
- Teachers at ex-DET schools were disempowered to make decisions about the nature and content of the curricula and resource materials which they were using (CR5.39);
- Very little evidence existed of engagement with, or experience of, integrated classroom practice and active learning pedagogies (CR5.39, CR5.40);
- Teachers were enthusiastic and interested to become part of an ongoing curriculum development initiative for junior primary environmental education, having had little or no such opportunities in the past (CR5.39, CR5.40);
- Short interventions (such as the two day workshops initially held with these teachers) are not nearly sufficient to engage teachers in a process of educational change. The possibility to form lasting partnerships with the education department to support the INSET initiative was considered a priority, if this project were to proceed (CR3.39, CR5.40); and
- A review of the teachers' input in planning a way forward for further workshops (CR5.42) revealed that ongoing workshops would need to focus on independent decision making, skills for planning, activity development, the use of a diversity of materials to support planning and teaching as well as the development of relevant action-based projects and more relevant curriculum content (Khayelitsha workshop report, 17-08-1994; Port Elizabeth workshop report 06-06-1994; DF85, DF118).

Given these recommendations, a comprehensive workshop programme to extend and support the initial curriculum development workshops was planned with A2 for 1994/1995. At the time, the workshops were also planned to respond to the changes created by the 'curriculum cleansing' policy[13] of the new Department of Education. This policy states that *all* junior primary teachers now have to teach environment studies in grade 1, grade 2 and grade 3[14]. The pilot project

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[13] The 'curriculum cleansing' policy was instituted by the Department of Education soon after the 1994 elections. The purpose of this policy was to eradicate signs of obvious racism and sexism in the existing syllabi of the 18 education departments, and also to amalgamate all 18 syllabi for each subject area to 'equalise' and create a core national syllabus for each subject area which could be used by all schools, in all provinces. This was completed in roughly six months. The core national interim syllabi were distributed to the newly established provincial education departments which were then tasked with 'regionalisation' of these syllabi. I was invited to participate in the regionalisation of the Western Cape Education Department environment studies curriculum and was able to invite some of the teachers who had been actively involved in the Khayelitsha environmental education INSET pilot project (CR5.1). However, recent feedback from the national marketing staff at Juta Educational Publishers confirmed that only certain of the provinces have regionalised these syllabi, and many of the other provinces are 'implementing' the national core syllabus for 1996 (DF141).

[14] During the apartheid era, only so-called 'white', 'coloured' and 'indian' schools were required to teach environment studies in grade 1, grade 2 and grade 3. The 'black' schools were required to teach environment studies in grade 3 and grade 4. The implications in the change of policy are far reaching and may have serious consequences as teachers in the previously 'black' schools have no materials for the teaching of environment studies in grade 1 and grade 2, nor do they have comprehensive syllabi (given that only some provinces have regionalised their syllabi), and

planned for Khayelitsha in 1995 included two groups (grades 1 and 2, and grade 3) from twenty-six schools in the Site B and Site C areas (CR5.12). Workshops were planned to respond to these policy changes and to incorporate a response to the recommendations listed above. A series of five workshops was planned for each group over the year (DF121, CR5.43). Besides the curriculum development processes (see figure 5.5), activity development and syllabus extension work done by teachers during the workshops (DF122-128, CR5.44), the following significant outcomes emerged from this initiative:

- The involvement of A3 as participant in presenting and organising the workshops became a central feature of the process. Her involvement assisted in enhancing my communication with the teachers, and enabled us to use the We Care Primary materials to develop demonstration lessons[15] (see figure 5.6) to stimulate reflective discussions on the processes involved in developing learner participation and active learning opportunities. Through involvement in this process, A3 intends embarking on a research project to observe and develop processes of active learning and pupil participation in environmental education programmes in the junior primary school phase (Mhlauli, research proposal, M. Ed; University of Stellenbosch, November 1995). Involvement of a co-operative learning consultant in one of the workshops added a further dimension to these workshops and teachers were able to experience some of the more well-known co-operative learning approaches which may help enable learner participation in classrooms. The way in which these co-operative learning techniques were used in the workshops (see figure 5.6) formed a focus for critical reflection on the use of co-operative learning in junior primary classrooms and also provided 'capital' to reflect on the group participation during the workshops. The comments which follow reflect the process:

  > ... involvement with my colleagues was helpful to me ... listening skills we practised were good ... being involved in discussion helped that many ideas and information came from the teachers ... the way of grouping the children with the coloured stickers was new to me ... sharing information made me feel not alone ... to make live demonstrations with pupils helped me to learn more ... letting me

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neither have they had experience or training in the teaching of environment studies for this school phase. In addition, standard two teachers in the ex-DET schools will now be expected to teach science, history, geography and health education to standard two classes, where previously they were teaching environment studies. Through my experience of providing INSET for environmental education in the junior primary school phase, it appears that there are very few organisations or education departments with the experience, expertise or resources to provide support for these curriculum changes. The dangers of policy changes with little consideration for the practical realities of these policy decisions seems apparent through this decision, which in this case is paradoxically reinforcing the inequalities which the policy is aimed as alleviating.

[15] In previous workshops I was not able to participate in demonstration activities as part of the workshop procedures due to the fact that junior primary children learn through mother tongue instruction. Not being able to communicate in Xhosa, I was not able to communicate with the children, and could therefore not participate in demonstration activities. In addition my communication with teachers was limited, and I could therefore not always participate *with* them in reflective activities, but could only stimulate these activities.

do things myself helped ... we learned more in a short period of time (DF126).

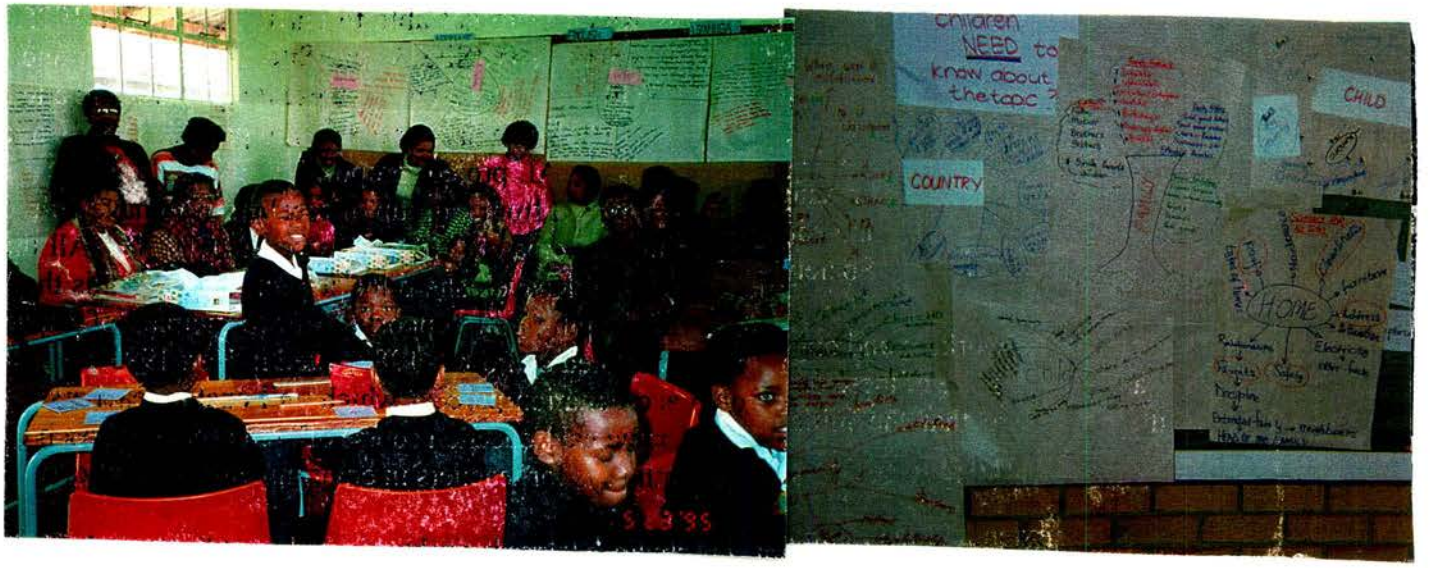


*Figure 5.5* *Teacher participation in the Khayelitsha curriculum development process*

*Figure 5.6* *Demonstration lesson during a teacher workshop illustrates the principle of active involvement and participation in the learning process (see table 4.3 and 4.3.2.3)*

- An environmental education open day (CR5.45), organised in collaboration with the Environmental Studies Action Committee (representatives of the group, CR5.46), was held on 13 September 1995. The purpose of the Open Day was to inform principals, Heads of Departments and Education Department officials of the INSET process being developed as part of the We Care Primary materials development project, and to inform other teachers and educators of the importance of developing environmental education programmes in the junior primary school phase. A further aim was to invite and involve a range of non-governmental environmental education organisations with a view to

planning an ongoing programme for the teachers, in which they could be exposed to a range of environmental education initiatives such as:

- The recycling initiatives of the Fairest Cape organisation;
- The nature reserve education programmes of the Environmental Education Resources unit at the University of the Western Cape;
- The botanical resource and education programmes offered by the National Botanical Institute at Kirstenbosch; and
- The resource materials and education programmes offered by the Western Cape branch of the Wildlife Society.

A programme of networking and ongoing teacher support for environmental education will be planned with some of these organisations and the Environmental Studies Action Committee to ensure that the initiative remains an ongoing process, and becomes sustainable.

- Further plans for extending the INSET process initiated by the media centre workshops and the Khayelitsha pilot project are being developed in collaboration with the Centre for Educational Development at the University of Stellenbosch (CENEDUS) and funds for this project have been sought (CR5.47). This will involve an extension of the INSET process to schools which were not able to participate during 1995, and will involve teachers from the Khayelitsha (Site A and Site D), Guguletu and Nyanga areas. A programme officer will be employed to organise the process and a team of five support teachers will be appointed on a part time basis to provide INSET and support to other teachers (We Care / TOTAL project proposal, CENEDUS 1995). These five support teachers will be appointed from a group of teachers who have volunteered to become part of this ongoing participatory research process (CR5.48). All these teachers have been participants in the Khayelitsha pilot project. Through this the We Care Primary project is both developing and supporting the principles of capacity building and participant research noted by Posch (1988, cited in Hart 1993:120). These courses will be linked to an accreditation process which will enable teachers to enter the Further Diploma in Environmental Education course offered at Stellenbosch University, thereby creating career pathways for teachers in environmental education.

- Significant contributions towards establishing relevant frameworks and content to extend the interim syllabus (implemented in January 1996), and ideas for a number of new We Care Primary project packs were developed through the Khayelitsha INSET project (see figure 5.5). Two authors have been drawn from this group, and are currently participating in the author support programme co-ordinated by A4 and myself to write-up the initial contributions offered by the teachers (CR5.49).

- A syllabus guide (CR5.50) was developed as support material for the use of the We Care Primary materials with the core national interim syllabus (see figure 5.7). This was done as a response to teachers' concerns on how to use the materials for teaching the new interim syllabus. The syllabus guide was planned to indicate how the We Care Primary materials can both support and extend this syllabus.

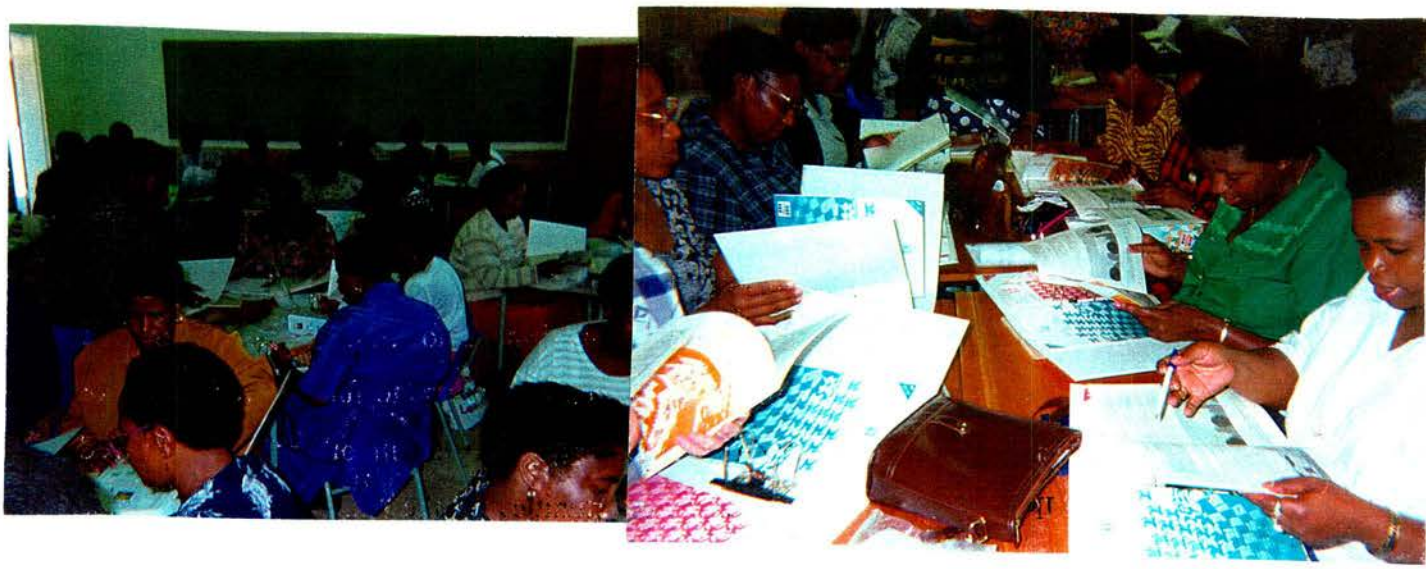

*Figure 5.7* *Teachers using the We Care Primary materials as support for curriculum planning during the Khayelitsha INSET workshops*

- New authors from the group of teachers began work on a range of pupil materials for junior primary environmental education (see figure 2.3 and CR4.11) early in 1996, which will be developed and trialed through the ongoing INSET and curriculum development workshops (as in figure 5.2). The We Care Primary materials have, to date, been developed primarily as teacher materials. Some pupil materials were included as pull-outs in the centre of the project packs (CR5.51, see Appendix 4). These were designed to respond to the requests for worksheets, games, and hands-on pupil activities raised during both the phase one (see 4.4.1) and the phase two workshops. The ideas for the worksheets and games were generated through the interactive workshop process described in 5.5. The development of We Care Primary pupil materials will form the major focus of the phase three activities of this ongoing materials development project, and will be co-ordinated in collaboration with A4 at Juta Educational Publishers.

### 5.6.4 Reflections on the phase two curriculum development, materials development and in-service teacher education processes

Through these workshops the integral relationship between resource materials and curriculum development became obvious. Throughout the INSET programmes, the We Care Primary materials were used fruitfully to initiate new ideas, and to reflect on planning and activity development. However, at the same time, the focus on curriculum development provided further insights for ongoing materials development, and many of the activities for the We Care Primary project packs (which were being developed concurrently) were trialed by teachers engaged with curriculum development and change. The experience of the way in which the We Care Primary materials were used in this process, supports McFadden's (1992:80) position that curriculum and

materials development should be concurrent, integrated processes and one should not precede or be separated from the other.

The value of ongoing support for change (over a period of two years) in junior primary curriculum development was made visible through this project. The opportunities provided for teachers to experience the planning process during the workshops, to return to their schools and experiment with the change ideas in their own contexts, to return to further workshops for reflection, to question their practice, and to share their experience with other teachers proved to be a valuable INSET process and provided opportunities for the " ... carryover of course learning into practice ..." (Robinson 1994:1; see 4.3.4.2). In arguing for meaningful transformation and for the development of lasting, co-ordinated and more meaningful INSET experiences for teachers, Robinson (1994:2) makes a plea for the institutionalisation of INSET at different levels. In the case of the media centre workshops the project was developed as a research project to review and research a new concept of supervision. The role of subject advisors as INSET providers, through the formation of strategies, partnerships and the development of INSET programmes through teacher participation, formed a focus of this project (Baxen 1995).

These INSET projects are supported by Robinson and Versfeld's (1994:4) statement that INSET should be viewed as a *process* and not an event, that "... good INSET is a part of a teacher's career". They qualify good INSET with concepts of accountability, empowerment, flexibility, accessibility and networking. Through establishing partnerships of this nature with state structures and resource providers, and with subject advisors concerned with quality INSET provision, productive opportunities for INSET become possible. These INSET programmes can then be enacted *within the structures of the state driven education system*, and are not viewed by teachers and principals as peripheral, external or additions to teachers' daily work load, but instead become *part of teaching practice*. In order for environmental education to become an integral part of the schooling system, and be able to initiate and support educational change in meaningful and lasting ways, I would argue that environmental educators need to become engaged with the processes of educational change from *within* the departmental system, made possible through the formation of productive partnerships with INSET providers at education

departments, and through this process, help to define a new role for the subject advisory services.

These projects have proven that given the opportunity, teacher participation in curriculum development initiatives is possible if there are supportive conditions for authentic participation. This process is then able to contribute towards the development of more relevant curricula and materials which can contribute to quality education in the junior primary school phase. Teachers therefore become a valued resource for the process of transformation (see 4.2), as they are the people closest to the site of real change and transformation.

The importance of engaging in processes which are empowering and which build teachers' capacity to take on a diversity of roles in the change process (such as curriculum and materials developers, change agents, support teachers, authors of their own materials, etc.) should not be underestimated in transformation initiatives. However, the notion of empowerment (see 3.3.2), like participation, should not be viewed as unproblematic, and empowerment could be most valuable if developed reflexively with teachers through collective engagement and problem solving around common educational and/or environmental issues. Comments by Mhlauli (Khayelitsha workshop report, August 1995, DF132) provide some insight into a reflexive process of developing the notion of empowerment in workshops:

> What I noticed was a lot of thought and effort being put into the task, and as they got to grips with the task, they started to blend their topics with activities that would give an opportunity to pupils to participate in their own learning ... Teachers were excited to see the document which was drawn up from their ideas and deliberations during the workshops ... They were appreciative of the fact that the workshops were giving them an opportunity to make informed choices and decisions about what they would like to teach the children ... They felt empowered and confident by being involved in the process of drawing up the syllabus and talking about these workshops ... The session showed us evidence that the teachers have been working on the new ideas and skills that have been brought closer to them by these workshops ... Recycling was introduced and children went to collect cans and litter, and we saw the anti-litter monsters the children made ... The children made materials in the form of a variety of useful instruments from old tins, plastic bottles, paper plates [see figure 5.8] ... All teachers in the Western Cape should be involved and new booklets that are developed should be introduced to them through these workshop sessions as they bring meaning into teaching ... The We Care booklets strengthen interest in environmental education.


*Figure 5.8 Samples of pupil work stimulated through the Khayelitsha INSET workshops*

## 5.7 REFLECTIONS ON THE ROLE OF MATERIALS DEVELOPMENT IN SCHOOL-BASED CHANGE PROCESSES

The central theme of this research initiative was to investigate and clarify participatory orientations to materials development in environmental education, and find ways of developing relevant curriculum materials which would be flexible and adaptable for use in a diversity of junior primary classrooms and local environmental contexts. This materials development process has, through ongoing reflexive action and reflection, tried in some way to challenge teachers and to move away from modernist approaches or 'normal' centre to periphery, authoritarian approaches to materials development, and, in so doing, respond to the demand for educational transformation in the junior primary school phase.

In Chapter 2 I mapped possible pathways towards transformation for the We Care Primary materials development project (see 2.4.3). Re-visiting the pathways mapped in Chapter 2 and reflecting on the socially critical orientation (see 2.2.4 and 4.5.1) of the project revealed the directions set for the project. These directions (through a variety of 'moments of change') have positioned the We Care Primary project as a participating role-player in the process of transformation in South African education, albeit focused on a regional or local district level.

A gradually extending national network has developed through the following: workshops in areas outside of the Western Cape (DF82, DF83, DF85, DF140, DF150); ongoing staff development with the national marketing force at Juta Educational Publishers (DF46, DF48); national publication of the materials and direct marketing to schools around the country by Juta Educational Publishers (DF47, DF59, DF158, DF159, see Appendix 4); national television, radio and printed media coverage (DF54, DF106, DF137, DF151, see CR5.53); national information brochures and the compilation of the interim syllabus support guide (DF142, CR5.50); submissions of the materials for approval at education departments for inclusion on the approved book lists (DF107, CR5.52); academic networking and paper presentations (Lotz 1995a, 1995b; CR5.2, CR5.13); and participation in curriculum and policy initiatives (DF141, CR5.1).

Evidence of change, revealed at different times throughout this research project, reflect movement along the pathways towards transformation which were mapped for the project in Chapter 2 (see 2.4.3). This evidence highlights the potential of the We Care Primary project to continue as both a stimulant and participant in the process of educational transformation in junior primary education. Some changes and shifting orientations which emerged during the research project are:

- The development of opportunities in which teachers could engage with critical reflective practices in materials development and curriculum development. The development of these opportunities enabled a critique-in-action of the historical and social context in which knowledge is created, and, through participation in curriculum development and materials development, teachers were able to help define the knowledge which is deemed relevant for junior primary environmental education. Knowledge production was thus removed from the realm of the expert and placed in the hands of the practitioner;
- Ongoing and reflexive engagement with the rhetoric of enlightenment and empowerment through participation revealed that the use of rhetoric in change initiatives is not unproblematic. A reflexive re-searching and collaborative definition of what authentic participation means in participatory materials development was gradually, and collaboratively, defined within the context of the project;

- Engagement in collective critique of the dominant cultural patterns of schooling[16] was reflected by active development (throughout the We Care Primary project) of authentically participatory orientations to curriculum and materials development, co-operative and collaborative ways of working together, critical and reflective thinking, active learning pedagogies and integrated classroom practice;
- The development of action-based projects and ideas for activities to address local issues (which were used in the development of new materials) were developed through reflection on local environmental conditions, and the possibilities of addressing environmental issues through the school curriculum was brought into focus;
- A new role for participating teachers as critical educators and reflective practitioners was defined through ongoing participation in the development of curriculum materials;
- The development of an enabling infrastructure which could provide opportunities for authentic participation in curriculum and materials development, supported from *within* the system, was explored and developed;
- A wide range of activities which reflected a concern for the provision of quality education in the junior primary phase was developed. These activities were designed to address the issues of relevance, literacy and numeracy development and an engagement with the real life experiences of children, reflecting broader societal concerns (see 2.4.1; see Appendix 4); and
- The aspiration to challenge managerial hierarchial approaches (the RDDA model) to materials development and change was realised through ongoing critical and reflexive engagement with participatory processes of materials development and the change process. Although elements of the RDDA model were visible throughout the research project, these were not the only materials development strategies apparent, nor the only perspective of change.

These changes all reflect potential areas for ongoing inquiry and change within the We Care Primary materials development project, and are supported by current policy trends in

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[16] For example behaviourism in teaching and learning practice, reductionism in curriculum development, authoritarianism in school cultures, structural functionalism in school organisation, technicism in teacher education and materials development initiatives, and individualism in the ethos of schooling (see 2.2 & 2.4 and figure 2.4).

environmental education in South Africa, which are described through the Environmental Education Policy Initiative (EEPI, Clacherty 1994:62). Clacherty (*ibid*) draws attention to the opportunities which are 'opening up' for environmental education to participate in broader societal change in South Africa:

> Environmental issues, resource sustainability, maintenance of human quality of life, equitable distribution of (environmental) resources are all rising in public consciousness and are entering the political debate. With rapid and fundamental social evolution, the time is now probably as right as it will ever be for environmental educationists to achieve widespread adoption of sound environmental principles and practices in South Africa.

In describing possible ways forward for environmental education in South Africa, Clacherty draws on the participatory policy formulation process of the EEPI to formulate the following position statements as possible guidelines for materials development, curriculum development and teacher education in environmental education (all of which are reflected by the changes apparent in the We Care Primary project):

- Local materials development needs to be seen as a way of breaking the passivity of textbook dependence and *simultaneously promoting teacher development*;
- Long term, empowering in-service teacher support needs to be established during any curriculum reform and *teachers need to be brought into processes of curriculum innovation and planning*;
- The curriculum should *reflect the environmental realities and concerns* of all people in South Africa;
- The general curriculum needs to take account of people's aspirations and be far more relevant to their needs; and
- *Partnerships* between legitimate education authorities, NGOs and industries, amongst others, *need to be encouraged* in order to achieve adequate provision of resources (Clacherty 1994:62,63, my emphasis).

Through mapping the shifts in orientation to both the research design and methodology, as well as the research and project action within the relational dynamics of the We Care Primary project, new ways of conceptualising and enacting materials development are emerging. New roles for teachers in change and transformation initiatives are materialising and the capacity of young

learners to be actively involved in solving environmental issues is being developed. Through this research project these areas have come under critical scrutiny through ongoing action research with teachers (see Chapter 6) and through reflexive responses to emerging issues, trends and opportunities (see Chapters 3, 4 and 5). Janse van Rensburg (1994:17) notes that "... clarifications of modernistic delusions and reflexive reconceptualisations of ways of engaging with the environmental crisis ..." may contribute to both the maintenance of a healthy environment and the transformation of education, which is needed if we are to provide for quality education in our classrooms which will, in turn, enable all South African children to have access to meaningful education.

As noted and described throughout this research report, the ongoing engagement with the process of change is not easy or simple to 'implement', but seems to be a highly complex, unpredictable, contextually reliant social process. Fullan (1991:287) notes that superficial, modernist strategies of change and prescriptive or authoritarian interventions may do more harm than good (Fullan 1991:287) or may simply constitute "... change without difference ..." (Goodman 1995:2,3). Wilson and Corcoran (1988:159) advise that policy makers and others involved in the processes of educational change and transformation "... temper their desires for immediate and total change with an understanding of the complexity of the change process". Fullan (*ibid*) recommends that educational change interventions should be

> ... comprehensive, multifaceted, interrelated, [with] short-, medium- and long-term strategies, and must be persistently applied and continuously amplified and reshaped. *Complexity and persistence go hand-in-hand.*

Educational change involves *learning* how to do something new. Given this, if there is any single factor crucial to change, it is professional development. However, this should not be conceptualised from a managerial-hierarchial, evolutionary or technicist perspective. Popkewitz (1993/4:21) notes that "... (c)hange is not in the evolutionary progression of events or in the consciousness efforts of people to influence those events. Change is in the *manner in which* and *the conditions in which* concepts change" (my emphasis). Teacher education has been receiving enormous attention over the past five years, with much emphasis being placed on the development of INSET policies and practice. The valuable role which materials can play as a

support for curriculum development, and learning new ways of teaching and learning, has been made clear through the development of this project, as has the emphasis on a concern for the conditions in which change occurs. Problems in changing schooling may be less a question of dogmatic resistance and the 'fault of the teacher' than a question of the difficulties of planning and co-ordinating a multilevel social process involving thousands of people all occupied at different 'strata' or levels in the education system. *It would appear that without constructive partnerships between the state, the non-governmental organisations, the private sector and teachers themselves, at local and national levels, this will become an insurmountable task.*

The journey described in this chapter emphasises the many challenges of educational transformation. The descriptions and reflections relayed here highlight the realisation that transformation is not simply the mastery or development of simple innovations, but rather involves a highly complex multidimensional collection of social processes which seek to fundamentally alter the ways in which schooling is practised. This may include the formulation and praxis of new goals, new roles for teachers, principals, learners and support services, and requires the development of collaborative work cultures. This chapter encourages environmental educators, teachers and other learners to embrace both a critical and reflexive stance towards innovation and change, and realise fully the complexities of the nature of the business of educational change. Like Cuban (1988) we might ask the question, "... (h)ow can it be that so much school reform has taken place over the last century yet schooling appears pretty much the same as it's always been?" *The challenge for educators may thus not be located in the design and devising of appropriate strategies of change or even the development of appropriate materials or curricula for changing schools, but rather to engage reflexively with in the relational dynamics of the change process itself* (in which the development of materials and curricula provide the 'capital' and/or support for the change process). Examples of practices which have led to constructive and fundamental change in the practice of schooling (for example Davidoff 1993; De Lange, Lotz and Schreuder 1995; Flanagan (ed.) 1992; Greenall Gough and Robottom 1993; Macdonald 1991; Malone 1994; Martin-Kniep *et al.* 1995; O'Donoghue 1990; Posch 1991; Robinson 1993; Robottom 1992; Schreuder 1994; Walker 1989, 1993; Wals, Beringer and Stapp 1990 and others) may prove to become useful guides through which we may better understand the nature and extent of efforts and processes which may fundamentally alter

the curriculum processes, the culture and structure of schools, the structuring of roles within schools, the organisation of responsibilities, including those of parents, communities, educational departments, support services and students, and, in so-doing, we may be able to confront some of the many challenges which the dual crises of environment and education present to us in a period when educational transformation and environmental problem solving and risk perception are of paramount importance to the reconstruction of our society.

Involvement in the change process made me profoundly conscious of the immense challenge being posed to researchers, university academics, students and co-learners (depending on the role we occupy at different times). I have realised that the lessons about educational change cannot be removed from our own experience and encounters with others. Opportunities for change and transformation, not only in the system of schooling, but also in the halls of academia, have never been more abundant. In reflecting the challenge of change Fullan (1991:351) notes that

> ... (a)cting on change is an exercise in pursuing meaning ... one of the impressive features of viewing change from the perspective of meaning lies in the realisation that there are problems and responsibilities at every level in the educational system.

Working *with in* educational change brought with it a realisation that change is a multi-levelled process, with a range of multi-levelled responsibilities through which new meaning and pockets of change (reform) are created in many small ways. Ludwig Wittgenstein (1966, cited in Popkewitz 1993/4:22) provides a way of understanding historical change as "... multiple rates developing across different institutions at different times that come together in what can be called a historical conjunction ..." which may add up to a new order of things. Systems do not change by themselves (Fullan 1991:52). *It is people who change systems through their actions* and the *way in which they engage with in these actions* (see 2.2.2).

A reflection on the research process in the next chapter provides some perspective on the role of research (and the researcher) in engaging with the multi-levelled nature of doing research *with in* a process of educational change, stimulated by the assumptions and ideals of socially critical environmental education. Through ongoing research into, and engagement with, some of the issues emerging from phase one, I have tried, through reporting this chapter, to reveal

some aspects of the social processes through which the We Care Primary materials were developed in phase two. I have also tried to reveal some of the interacting dimensions of change within the project, and how materials development processes are directed by history and context, values, interests and critical communities of people working towards change. The next chapter will illustrate "... how our methods of research emerge from our involvement in our social conditions and provide a means whereby we can seek to resolve the contradictions we feel and the worlds that seem unresolved in our everyday life" (Popkewitz 1984: viii).

## 5.8 CONCLUDING COMMENT

> *Bringing along a camera, while usually sacred to most tourists, can invite a lot of extra worry. Between the stressful temptation to jam every notable event down your lens, the high cost of film, equipment and developing, and the ever present paranoia about loss or theft, you could end up smashing your beloved Nikon to bits all too willingly. Still, personal photos are more, well, personal than postcards, and a shot of that guy from Cork with the accordion and the dancing eyes says more about your trip than a glossy poster of Big Ben (From Let's Go 1993: The budget guide to Britain and Ireland).*

The description of phase two of this journey has been directed by the choices I have made about the photographs or 'shots' I have chosen to present in this research account. I have tried to avoid the 'stressful temptation to jam every notable event down the lens' and have selected those pictures, taken through diverse lenses, which were able to provide insights into this journey in a way which could recount some of the extent and value of the experience, and which could still reflect those personal moments of interaction and encounter with fellow travellers along the way:

> *... the workshops were great ... we need more, it's still a long way to go till we have really changed our curriculum ... the one workshop that you did with us when you worked with us individually was valuable and helped us think about and plan our own curriculum ... I think the workshops have been like building blocks, they started out broadly, and have come closer to what we are doing at our school and in our classes ... it actually made more sense ... we're still using the booklets ... yes, we actually need to work on another workshop to pull the whole thing together ... really get into practical classroom level stuff ... yes, if we take one theme and work out how to plan through the children's project work ... extend the theme ... how you develop themes more ... what we should do to involve the children ... right from grassroots ... there are so many issues ... right through to evaluation and assessment of it ...* ***so, what should we plan to do next?*** (I1, pers. comm. 28-10-1994).

# PHASE THREE

# A JOURNEY *BEYOND* SOCIALLY CRITICAL ENVIRONMENTAL EDUCATION

*What we call the beginning is the often the end*
*And to make an end is to make a beginning.*
*The end is where we start from. And every phrase*
*And sentence that is right (where every word is at home,*
*Taking its place to support the others,*
*The word neither different or ostentatious,*
*An easy commerce of the old and the new,*
*The common word exact without vulgarity,*
*The formal word precise but not pedantic,*
*The complete consort dancing together)*
*Every phrase and every sentence is an end and a beginning, ...*

(From Little Gidding V, T.S. Eliot)

# CHAPTER 6

# POSSIBILITIES AND OPTIONS FOR FURTHER RESEARCH WITH/IN AND BEYOND THE WE CARE PRIMARY PROJECT

*A good book, like a good girl, spells out the implications at the end, so that there is nothing left to do but close the book and buy another ...*
(Kappeler 1986:220, cited in Lather 1991:153)

*So I find words I never thought to speak*
*In streets I never thought I should revisit*
(From Little Gidding II, T.S. Eliot)

*Even the foundations of scientific rationality are not spared from the generalized demands for change. What was made by people can also be changed by people. It is precisely reflexive scientization which makes the self-imposed taboos of scientific rationality visible and questionable ... We are experiencing a transformation of the foundations of change ...* (Beck 1992:14,157)

## 6.1 INTRODUCTION

In attempting to create a text which is not "... knitted according to the intentions of others ..." (Pessoa 1991:7, cited in Diamond 1993:512) and which is not planned to be recodified into new norms, I was inspired by Kappeler's provocative statement to restate and reflexively review some of the main pathways I have woven across the preceding pages. I will do so using Kappeler's (1986) format of multiple endings (Lather 1991:153), through which I hope to open up possibilities and options for further research. This thesis offers no synthesis, no final conclusions, as its vision is somewhere other than progressively perfectible or rationally arguable scientific systems:

> I do not wish to conclude and sum up, rounding off the argument so as to dump it in a nutshell for the reader. A lot more can be said about any of the topics I have touched upon ... I have meant to ask questions, to break out of the frame ... The point is not a set

> of answers, but making possible a different practice ... (Kappeler 1986:212, cited in Lather 1991:159).

The situatedness within the discourse of critical theory and socially critical environmental education, together with the challenge of responding to the environmental crisis through environmental education in ways which do not re-enact the grand narratives of modernism (see 2.2), has presented enormous challenges within this research project. This chapter reveals an internal and tentative critique of the preceding pages and attempts to move the research and pedagogy done in the name of liberation, democracy and transformation beyond the contemporary horizons of existing critical traditions which have, according to Lather (1991:155) "... become trapped in their own limitations". O'Donoghue (1994b:23) argues for the mobilisation of doubt about the "... ideological trajectory of critical theory ..." and warns against adherence to an ahistorical critical tradition which "... takes on a life of its own to give identity and power to people and institutions" (*ibid*:30). He critiques the recent tendencies in environmental education to reify critical theory traditions and writes that

> ... (a) more recent feeding frenzy around a somewhat convoluted inversion of modernist social engineering which idealises the critical facilitative engineering of self liberation may merit particular attention ... [so that we may clarify trends in social theory and] stop simply bobbing in the wake of mainstream education discourse and feeding off a debris of functionalist theories of awareness / behaviour change (*ibid*: 28).

Beck (1992:160,167) argues that

> ... (t)he gate through which [socio-ecological] risks can be opened up and treated is called the critique of science, critique of progress, critique of experts and critique of technology ... Science is becoming human. It is packed with errors and mistakes. Science can be conducted even without truth[1], perhaps even better, more honestly, with greater versatility, more audaciously and bravely.

Janse van Rensburg (1995:211) argues for the expansion of possibilities and the release of potential beyond the limitations of modernist assumptions in our search for meaning and clarity

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[1] Positivism (and science) insists that only one truth exists. Rich (1979:187, cited in Lather 1991:51), reflects post-positivist and non-positivist understandings of inquiry and science, when he argues that "... (t)here is no 'the truth,' 'a truth' - truth is not one thing or even a system. It is an increased complexity".

on processes of change and transition and argues that "... (r)ather than confirm expectations, science, research and critique should open up possibilities".

This participatory action research project was grounded, through a socio-historical location of the research question, in the assumptions and ideals of a critical inquiry paradigm (described in Chapters 2 and 3). The purpose stated in 2.4.2 described the choice of these perspectives to guide the research process as *an attempt to clarify the critical assumptions and orientations of socially critical environmental education as a possible 'tangible alternative' to modernist models of environmental education and educational change in a South African context.* Many of the aspirations of socially critical environmental education have been revealed throughout the research process and can be seen through a reporting of the ongoing interaction with teachers and other educators, literature and ongoing engagement with/in the processes of materials development and change over a period of four years (see Chapters 3, 4 and 5). The continuing search for 'better ways' of developing materials with teachers, guided by the ideals of critical theory, provided opportunities to reflexively review the features of the project and the research processes from *within* the project. As the descriptions of phase two have shown, the critical and reflexive stance of the project enabled a response to the 'weaknesses'[2] which emerged through phase one. The research project therefore represents an ongoing search for clarity and improved practice. However, whilst evidence of change was visible, and a range of essentially imperfect resource materials was developed (see figure 2.3), a number of tensions were illuminated, which, if reviewed from the assumptions and ideals of the critical paradigm, have not been resolved.

In questioning whether the project has 'failed' or 'succeeded', I find no answer. Given the socially constructed nature of the research enterprise, there may be no answer except to begin questioning the assumptions which directed the choices made along the way, my thoughts and perceptions at different times in the process, and the interaction with teachers during the research process, with a view to understanding the historical location and influence of the 'chosen paradigm' on the direction, nature and development of the research project. An extract

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[2] These 'weaknesses' emerged from a review of the project activities from the perspectives and assumptions and ideals of critical theory, emancipatory action research and socially critical environmental education, chosen as the guiding orientation to the study.

from my research journal describes the dilemmas of confronting and challenging the assumptions and ideals which guide our practice:

> Today I had an interesting and provocative discussion with I20 about the assumptions or 'positions' of the critical paradigm and how they direct your practice. We talked about the modernist assumptions (individualism, the continuation with the project of human enlightenment and its links to progress) which underpin critical theories. We talked too about the dangers of social engineering which critical theory brings with its assumptions. Who are we to enlighten others anyway, and to what do we enlighten them, is of course the question. A further question relates to the way in which we engage with the enlightenment process and how we prevent our actions from becoming subtle forms of social engineering? However, my experience has shown that working with teachers with/in a socially critical orientation does not always imply that you are socially engineering them just because you are working together on an educational project, and it does not always mean that you are trying to enlighten them to your ideals or the ideals of modernism's grand project of human Enlightenment, although it sometimes does happen, which I suppose is the danger - especially if you are uncritical and/or in a more powerful position. Being a researcher from a university and becoming increasingly linked to the label of 'an expert', being white with the privileges which being part of the 'advantaged' in South Africa has brought (not necessarily material), enough confidence to rise to almost any occasion and an unfailing sense of urgency and confidence in my vision of the need for change to become a reality in junior primary classrooms, does bring the question of power and history into my interactions with others. This is an aspect which I have become more aware of, and which I have tried to make explicit, and consider in my reflections and interactions with teachers throughout the research process. In the discussion today I became concerned with the almost flippant, reductionistic and simplistic tendency to 'sweep away' the notion of critical theory as an approach which is no longer appropriate as an orienting framework for environmental education. I asked a question (of myself and of I20) "so what now, what is the next approach which will become fashionable in South African environmental education?". Perhaps an answer lies in spending more time reflecting on the tendency of environmental educators to 'categorise' our actions into 'approaches' and 'fashions' instead of being concerned with questioning these categories and searching for better ways of doing our work. These 'approaches' seem to confuse the issue, and we often seem to be more concerned with justifying (and defending) our political position than with the development of sustainable living patterns. I now understand what T.S. Eliot means when he writes:
>
> The knowledge imposes a pattern, and falsifies,
> For the pattern is new in every moment
> And every moment is a new and shocking
> Valuation of all we have been ...
>
> Where have these 'paradigms' come from anyway and why do we get caught up in the 'patterns' to such an extent that we feel we have to fit into particular paradigmatic camps? In reviewing my research, I feel that the use of a socially critical framework has provided valuable orienting beacons which have helped to create many interesting and productive opportunities for learning about how we need to refocus our thinking in education. Many young learners are now participating in environmental education

> projects and activities in ways that are different from before and many teachers are beginning to think about the ways in which they teach young children, all direct outcomes of this research project. However, I have never been really sure whether in fact it was the critical theory, critical thinking and reflexive responses (or as C14 calls it - contingency response) or my sense of commitment, good educational interaction with teachers or a combination of all these influences which provided the 'success stories' in this research. I still think that simply casting aside the ideas of critical theory is an unproductive position. My experience of working with/in a socially critical orientation to environmental education signals that it is a useful orientation to environmental education if we engage with the assumptions and theories critically, and do not let the 'paradigm' drive or engineer our practice in inflexible and uncritical ways. I therefore come to the conclusion, at the end of this long litany, that it is not necessarily our theoretical orientations which cause projects to so-called 'fail' but rather it is the way in which we think about and make use of the theoretical ideals and assumptions within paradigms and positions which is more problematic. I need to think on this very complex issue some more, perhaps I will pick up on it when I write my thesis, as I am sure that many others are asking similar questions, if I am able to judge from reactions to 'new approaches' in environmental education (see also Janse van Rensburg 1995) and also the tendency which seems to be emerging to form 'oppositional groupings' or 'theoretical camps' in South African environmental education (journal entry 28-08-1995).

Interpreting the changes taking place and the emerging themes in the We Care Primary project from with/in the orienting framework provided by critical theory, emancipatory action research and socially critical environmental education can be criticised for "... privileging certain types of interpretations about the world from a vast array of possibilities" (Popkewitz 1993/4:23). Popkewitz (1987:352) writes:

> The problem of contemporary research is not a lack of a single paradigm to guide enquiry or, as some would say, the youth of the endeavour to collect data. Rather it is what Feyerabend focused upon when he spoke of professionalized incompetence; that is the tendency to reify knowledge, to make procedures central to inquiry, and to deny the relation of science to history. A consequence is 'professionals' who profess efficiency and rigour but who obscure the profound and complex quality of our human condition.

Popkewitz (*ibid*) also warns against constructing boundaries through reason and notes the dangers of reifying certain types of knowledge, paradigms or positions:

> ... we also need to develop a skepticism towards practices that seem to establish unambiguous foundations - be it notions of teacher autonomy, children's learning, or emancipation ... When we examine the labels of 'action research', collaboration,

> professional development in schools and reflective teaching - reform slogans which have currency within education - these practices tend to privilege the immediate and the present through defining direct relations between theory and practice. Scrutinized out are the social conditions in which systems of ideas are developed and the complex sets of debates, tensions and struggles that underlie the production of knowledge and power ... (W)e need to learn how the questions that we ask are themselves constructed within historically formed systems of ideas and social practices.

Popkewitz (1993/4:27) further argues that our study of schooling and educational innovations should involve a critical awareness that will enable us to understand how existing traditions and customs limit our search for possibilities:

> If we are to engage in something called action research or 'reflective teaching' we need to ask what systems of ideas organize how we construct the objects that we are calling schooling, children, teaching, learning and so on. This entails giving attention to 'systems of intellectual habits', that is the tools for critical thinking and the active dispositions that can prevent knowledge as appearing as a catalogue of techniques ...

In an earlier work Popkewitz (1987:352) argues that a multiplicity of perspectives is important when we recognise intellectual traditions and 'paradigms' as socially constructed and containing interest. He sees each perspective as providing vantage points for considering the complexities of our human condition and notes that "... (w)hen practised well, the different intellectual traditions or paradigms can enable us to 'see' and think about various elements of our social world in ways that can increase our understanding of the whole".

## 6.2 CRITICAL THEORY IN REVIEW

In this research project I have made extensive use of critical theory and the socially critical paradigm[3] in education to help me explore and construct the social processes which led to, and

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[3] Reference to 'paradigms' in this thesis is not used uncritically. It is used rather as a means indicating growth in my understanding of the way in which the 'paradigms debate' has developed in educational discourse. I agree with Lather (1991:108) who sees a paradigm as being a "... useful transitional concept to help us move toward a more adequate human science" and with Marcus and Fischer (1986:233, cited in Lather 1991:108) who note: 'To still pose one paradigm against the other is to miss the essential character of the moment as an exhaustion with a paradigmatic style of discourse altogether'". Atkinson *et al.* (1988:233) outline the 'dangers' of paradigms and the 'dangers' of Khunian rhetoric as being "... the presentation of ideas that are novel and distinctive, that are better framed as historically rooted and relationally shaped by

emerged from, materials development encounters with teachers in the We Care Primary project. 'Using' this paradigm has provided a range of beacons to guide the research activities, has helped to question power relationships and has guided the practice of materials development in this research project. Through this process insights and perspectives into the complexities of change within the formal education school system have been gained (see 5.7).

In Chapter 2 I illuminated a number of arguments of environmental educators who support the positions of socially critical environmental education *for* the environment (Fien 1993a, 1993b; Greenall Gough and Robottom 1993; Hart 1993; Huckle 1991, 1993, 1995a; Robottom 1987a, 1992; Schreuder 1995; Spork 1992). These positions, and the position on the role of teachers in educational change taken in this research project echoe Robottom's (1993:140) argument that

> ... in critical research the practitioner has the opportunity (in fact the responsibility) to "co-opt" the research to address and redress some of the contradictions, inequities and injustices that act to limit attempts to improve (environmental) education situations. Critical research aspires to 'empowerment through action'... Thus critical reflective inquiry, as the name suggests, creates the conditions for the environmental education practitioner to actually enact some of the principles held dear to environmental education - in particular, the principle of independent critical thinking.

However, in recent years reified positions on critical theory and change through the application of assumptions of critical theory have increasingly come under close scrutiny, for "... falling prey to the irony of domination and repression inherent in efforts to free one another" (Lather 1991:59). In particular, critical theories have come under close scrutiny from postmodernist perspectives[4] and have been criticised for:

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concepts that precede and parallel as well as interrupt them". They also note the "... intolerance, fruitless polemic, and hypercriticism ..." that accompany paradigmatic allegiances. This research echoes the arguments of Lather (1991:108) and Atkinson *et al.* (1988:243) that while we need conceptual frames for purposes of understanding, classifying research and researchers into neatly segregated 'paradigms' or 'traditions' does not reflect the untidy realities of real scholars and it may become an end in itself. Paradigmatic traditions should therefore not be treated as clearly defined entities, but only as loose frameworks for guiding and providing perspectives for research.

[4] The postmodern condition is one in which 'grand narratives' of legitimation are no longer credible (Lyotard 1984:86, cited in Lather 1991:6). Postmodernism signals a break with totalizing, universalizing 'metanarratives' and the humanist view of the subject that undergirds them. The

- The dependence on the vocabularies of politics and culture which are wedded to the dictates and assumptions of modernity and modernity's most sacred 'root metaphors'[5]. Models of criticism are thus value-laden and intimately fashioned by the language of modern consciousness which "... no longer make sense in terms of our current understandings of the ecological crisis, the belief systems of other cultures and the advance of scientific knowledge" (Bowers 1984:99);
- Structure and agency which is characterised as either-or (Lather 1991:154);
- Inscribing the will to power through sense making efforts which aspire to universal, totalizing explanatory frameworks (or 'grand narratives') (Lather 1991:155);
- Assuming a deficit approach to change in which the 'other' is cast as someone who is judged as needing improvement, enlightenment and empowerment (Janse van Rensburg 1994:13);
- Rationalist, individualist and structuralist assumptions which underpin most critical theories, and which seem to subvert the realisation of transformatory ideals (Janse van Rensburg 1994:13);
- Theoretical shortcomings which reflect a tendency to become disembodied and too abstract to be useful as an organising tool in education (Bromley 1989);
- Institutional rhetoric which defers to participatory processes, but which disguise agendas of researchers and facilitators who pragmatically juggle agendas and the need to report intervention successes to funders (O'Donoghue 1994a:66-67) reflecting the imposition

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subject as an autonomous individual capable of full consciousness and endowed with a stable 'self' has been de-centred, refashioned as a site of disarray and conflict inscribed by multiple contestatory discourses. 'Grand narratives' are replaced by "... the contingent, messy, boundless, infinitely particular, and endlessly still to be explained ..." (Murdoch, cited in Lather 1991:6). In Lyotard's (1984) definition, postmodernism is "... that which in the modern, puts forward the unpresentable in presentation itself; that which denies itself the solace of good forms ... that which searches for new presentations, not in order to enjoy them, but in order to impart a stronger sense of the unpresentable" (cited in Lather 1991:6). Lather notes (1991:21) that "... (p)hilosophically speaking, the essence of the postmodern argument is that the dualisms which continue to dominate Western thought are inadequate for understanding a world of multiple causes and effects in complex and non-linear ways, all of which are rooted in a limitless array of historical and cultural specificities".

[5] Bowers (1984:111) refers to modernism's root metaphors as being the good of progress, the absolute autonomy of the individual, the conquest of nature, the ideal of rational control, and the transcendence of traditions, all of which have been elevated to the status of Enlightenment icons (see 2.2.2).

of meaning on situations in the name of emancipation (Lather 1991:59) and legitimisation;

- Rationalist assumptions, goals and pedagogical practices fundamental to the literature on critical pedagogy - namely 'empowerment', 'teacher/student voice', 'dialogue' and even the term 'critical' are repressive myths that continue to perpetuate relations of domination (Ellsworth 1989:297);
- Non-dialectical, non-reciprocal perceptions of the role of researchers or 'universal intellectuals' (in Neo-Marxian critical theory) in which the researchers or 'universal intellectuals' become intent on demystifying the world for the dispossessed (Lather1991; Goodman 1992; Smart 1986);
- A perspective which views social traditions as unchanging mechanisms of ideological suppression from which human beings need to be emancipated[6] (Elliott 1992b:7);
- Skirting and misrepresenting the issue of false consciousness (Lather 1991:59); and
- Conceptual over-determinism (Lather 1991:54).

Lather (1991:59) sees the dangers of praxis-oriented empirical work as imposition and reification on the part of the researcher in which the subjects of the research become objectified and reified by their social conditions. She sees reciprocity in the negotiation of meaning, in which participants are integrally involved in the interpretation of the descriptive data and the construction of empirically grounded theories of their own practice, as essential to a "... more collaborative approach to critical inquiry" (*ibid*:69). This reciprocity is reflected in this research project by the shift in orientation towards conditions which enabled more authentic participation by teachers in the We Care Primary materials development process, and also in the process of research and meaning making in the project. Lather (1991:69) sees a more collaborative and inclusive form of critical theory as a way of building emancipatory theory and moving toward the establishment of data credibility within praxis-oriented, advocacy research.

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6 Elliott (1992b:7, citing Gadamer 1975) argues that social traditions can be far more dynamic and changing, and, inasmuch as they are, it is because the values they transmit are continuously reconstructed on the basis of practical reflection which incorporates the critical as an intrinsic dimension. From a Gadamerian point of view, the critical aspect of reflection does not serve an emancipatory interest in the sense of emancipation from social tradition, but, as an intrinsic feature of practical reflection, serves an evolutionary interest.

Firth (1995:23) argues that critical theory may ultimately provide us with structuring principles which can help us grapple with the contradictions, constraints and limitations of our ideas, theories and practices, and sees critical theory as a notion, not a thing:

> Classrooms are neither ripe for revolution nor for mindless complicity (McLaren 1994:321). The emancipatory potential of critical pedagogy is not something to be regarded as a dogma, as truth cannot be guaranteed. Critical pedagogy is a notion, not a thing. As a notion, it does no more than give form to a particular kind of democratic aspiration: to engage in changing the world as well as interpreting it. It offers an embryonic, local form of connecting educational activities with social and political action in complex practical circumstances.

Lash and Wynne (in Beck 1992: 8) argue for a 'new' critical theory which can operate in a changing society which is characterised by

> ... a transformed political culture which is at the same time localized - the world of the (post traditional) communitarianism, engaged in a seemingly ecumenical, though hopefully pluralist, process of globalization ... Such a theory - if it is to help realize even some of the aims of the Enlightenment - must be reflexively critical and disruptive of the very assumptions of the very project of the Enlightenment.

O'Donoghue (1994a:68) recognises that new ways of working through and with the assumptions of critical orientations to environmental education are needed when he distinguishes between enabling and engineering orientations to environmental education (see3.3.1) and suggests that instead of environmental education being used as an intervention to be implemented upon or for others, we may conceive environmental education as

> ... a critical process through which to co-construct an agenda for ongoing critique-in-action ... [which may] ... enable education to become reflexive social processes of evaluation and change through which people can restore and coexist within the earth's capacity to sustain an interdependent system of living things.

O'Donoghue (1994a:69) suggests that for environmental education to successfully co-construct local agendas for research and change we may need to give attention to the establishment of enabling structures and processes for environmental management and change at local, national and global levels, which emphasise public awareness and participation which is not 'handed down', and we need to give attention to the following aspects of our activities:

- Who sets the agenda of concerns;
- How environmental issues might best be put on the curriculum and/or community agenda;
- Which contexts and orientations enable reflexive change in community and school curricular situations?

Lather (1991:163) argues that instead of trying to construct 'how to' guidelines through our work, we should rather pay attention to:

> ... [taking] responsibility for our own practices so that our empirical and pedagogical work can be less toward positioning ourselves as masters of truth and justice and more toward creating a space where those directly involved can act and speak on their own behalf.

Against the background of a long history of educational practice and research which has marginalised, in fact largely ignored, the voice and life experience of teachers themselves, there has been a strong call for redress in recent years, so that teachers' voices are given due recognition and respect in the research enterprise (Britzman 1986; Dudley 1992; Elbaz 1991; Ellsworth 1989; Fullan 1991; Gudmundsdotter 1991; Johnston 1993; Lather 1991; Lester 1993). Hargreaves (1994:13) warns of the danger of educational research which, attempting to respect and recognise teachers' voices, talk of '*the* teacher's voice' or '*the* teacher/s' as if they are singular and uniform, embodying qualities generic to all teachers. Hargreaves (1994:13) warns against romanticising the notion of voice, and urges us to guard against 'selectively appropriating' voices which match our own. Through this we may valorise this unauthentic singular voice as the representative (generic) voice of all teachers, in a way that imbues our discourse with an undue sense of morality which serves to enhance our own positions of power.

Reflecting on the use of teacher voice in this research report, I recognise that in representing teacher voice (see 4.3.4.1) I have been caught between representing the authentic voices of teachers in the project, and a reified notion of *the* teacher and *the* teacher's voice. The search for creating conditions in which teachers could express their voices in dialogue with each other around the development of resource materials, however, reflects my attempt in this research project to enable those involved to speak their own words on their own behalf. However, in

representing this dialogue I recognise there is no such thing as value free education, or value free reporting, which forces me to confront the fact that research, like education, is a political act, a form of advocacy, both for a particular kind of knowledge, and a particular kind of education system and further, for a particular kind of society. Hence this research project can be viewed in crude and/or simplistic terms as either legitimating or challenging the current social order. An advocacy for a transformatory (see Chapter 2) and critical orientation throughout the research (see Chapters 2 and 3), and a realisation of the power-knowledge relationship advocated through the research enterprise (see 4.3.5), causes me to take Lather's (1991:161) comments about the dangers of romanticising the subject and experience-based knowledge seriously. I note too, for journeys beyond this project, the tentative solution she offers to the dilemmas of working with/in a 'new' critical theory:

> The best solution I have been able to come up with ... is to do our thinking and our investigating in and through struggle and to learn from the lessons of practice, one of which is that there is no 'correct line' knowable through struggle. The struggle reconstitutes itself and useful theories of social change must deal with its fluidity.

She encourages ongoing struggle and search for meaning with/in social theories of postmodernism[7], the conjunction in critical social theory of the various feminisms, neo-Marxisms and post-structuralisms[8] which she recognises as providing "... fruitful ground for

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[7] For a description of movement in critical social theory from rather unproblematic emancipatory impulse and some profound questions raised by postmodernism about the unproblematic emancipatory practice, see Lather (1991). She sees postmodernism's act of calling into question notions of totality, certainty, truth and neutral critique, and how our discourses create "Others" to have radical political potential which could "... provide us with a new basis for research and pedagogy in the 'human sciences'" (1991:xvii). She explores the implications of feminism, neo-Marxism and post-structuralism for developing inquiry-approaches in the human sciences that "... move us towards ways of knowing which interrupt relations of domination and subordination" (*ibid*:xvii).

[8] Post-structuralism is not a paradigm, but rather a set of perspectives broadly outlining stances toward knowledge, power and society that call into question the foundations of knowledge claims in all paradigms. For an accessible outline of the assumptions characteristic of a range of post-structuralist perspectives, see Solsken (1993:319). Lather notes that "... in the wake of post-structuralism, 'intellectual workers' can no longer remain oblivious to what has been brewing for so long ... We live in worlds full of paradox and uncertainty where close inspection turns unities into multiplicities, clarities into ambiguities, univocal simplicities into polyvocal complexities (Lather 1991:xvi). Post-structuralism offers better ways of examining 'otherness' and the

shifting us into ways of thinking that can take us beyond ourselves" (Lather 1991:164).

The task for critical educators is thus not a simplistic one. It involves moving research in different and, indeed, contradictory directions in the hope that more interesting and useful ways of knowing will emerge. Lather (1991:69) argues that rather than establish a new orthodoxy, we need to experiment, document and share our efforts towards transformatory and emancipatory research. The possible contribution made through the struggles to develop materials in 'better ways' with teachers in the We Care Primary project, is emphasised by Polkinghorne (1983:xi) who notes that "(t)he new historians of science have made it clear that methodological questions are decided in the practice of research by those committed to developing the best possible answers to their questions, not by armchair philosophers of research".

Throughout the We Care Primary project, the assumptions and theoretical ideals of critical theory have guided the research, and have provided the beacons to structure much of the research. In retrospect, however, there always lurked the real danger that the assumptions of critical theory could become reified in the research project, and that the research would fall into the trap of critical facilitative engineering (O'Donoghue 1994b). An ongoing reflexive search to respond to emerging 'weaknesses' and elements of social engineering practices, have largely enabled the research to move beyond reified notions and continue the search for more collaborative, enabling ways of doing research with teachers. However, this does not assume that elements of social engineering, structuralism, reductionism and behaviourism were completely eliminated from the research processes. To make such a claim would be to oversimplify or falsify and reduce the complexity of the research process, and deny the complexity and history of our human condition. Through reflexive response to situations in practice, I was not always able to 'practise' the theories of critical theory, and often found that my actions (and those of participating teachers) were directed by some of the delusions of modernism which manifest in, and are directed by, positivist and behaviourist orientations and interpretivist notions and practices. However, many of our actions could be regarded as being emancipatory and critical,

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relationship between 'self' and 'other'. In addition, post-structuralism's suspicion of totalising theories and expert prescriptions seems well taken when we attempt to generate ways of knowing that can take us beyond ourselves.

and much of the research action was motivated by conscious efforts to challenge power relationships and any examples of overt oppression and disempowerment created by apartheid and other modernist ideologies in schooling with teachers. A critical stance to the work of this project was omnipresent, as were the attempts at creating the conditions for democratic and empowering practice.

It seems that while many of the ideals of critical theory and socially critical environmental education are possible to 'implement' in practice, to reify and slavishly follow a 'critical theory position' or a 'recipe for socially critical environmental education' would appear to be a myth, not possible in practice. I would argue that environmental educators need to further the global dialogue about the 'paradigms debate' in environmental education. This does not imply that environmental educators should 'take up and defend their position' in true modernist fashion, but rather begin a process of reflexively engaging with/in and across theoretical positions to help us both define the politics implicit in our practice, and move towards understanding the complexity and the shortcomings of our theories of political and social transformation. Through ongoing dialogue, encounter and critical reflection, informed by multiple perspectives offered by postmodern, post-structuralist and various forms of critical theory, this may well be possible.

## 6.3 A REFLEXIVE PERSPECTIVE ON EMANCIPATORY ACTION RESEARCH

In this chapter I have argued for a change in perspective from the position of doing research 'directed' or informed by the critical theory paradigm (see 2.2.4 and 3.3.1), to a shift in research perspective which, drawing on post-structuralist perspectives, reflects an alternative position on research. This shift in research perspective is aptly described by Goodman (1992:124):

> Whether the goal of research is to predict, understand or empower and liberate, all forms of knowledge are discourses that human beings have created in order to discover 'truths' about themselves; the process by which this discovery takes place also affects those developing discourses (Rajchman 1985). From this perspective, the goal is to conduct research through a reflexive process in which science can continually deconstruct the realities it helps to create. Reflexivity erodes the authority of academic discourse in order to challenge concepts of power, legitimacy and domination. In efforts to discuss and illuminate life in schools, there should be a recognition of one's own vulnerability to conceive, understand, and write about what is observed.

The changing research perspectives within the We Care Primary project reflect Popkewitz's (1984:viii) view of the social role of the intellectual in which he sees the categories taken by the researcher as being

> ... shaped and fashioned in contexts of people who have struggled with the strains and contradictions of our human conditions. The social and educational researcher appropriates, exploits, reformulates and verifies ideas that have their roots in social movements.

Popkewitz (1984:7) notes that the value and 'potency' in social science does not lie in the utility of its knowledge, but rather "... in its ability to expand and to liberate the consciousness of people considering the possibilities of their human conditions". Janse van Rensburg (1995:249) echoes this argument and, citing Popkewitz (1984:7), she notes that "... the origin of the term re-search may lie in a view of inquiry as '... a search for new metaphors for thinking about everyday affairs ... enabling people to conceive of social reality from different layers of interpretation which were not readily apparent in everyday life'".

Action research requires that practitioners take a research stance towards their own practice and thus implies a search for better understanding within their practice (Robottom and Hart 1993a:24, see 2.4.2). In reviewing the research process of this project, and in the light of the ongoing reflections on the research process throughout this report (see 3.5.3 and 4.3.5), I now offer a reflexive perspective on the process and notion of doing emancipatory action research with teachers in phase one and two of the project, through which I extend the research stance which I have taken towards my own practice (see 4.3.5), and reflect not only on the techniques of emancipatory action research (see 4.3.5) but on the assumptions[9] which underpin the practice of emancipatory action research in a South African context.

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[9] Janse van Rensburg (1995:192, citing Beck 1992:156) notes that " ... (r)eflexive science (Beck 1992) is mindful not only of its techniques, but also of the assumptions underpinning them ... 'science begins to extend the methodological power of its skepticism to its own foundations and practical results ... Demystification spreads to the demystifier'". She (1995:201) describes a reflexive orientation to research as one that "... allowed for an expansion of knowledge which included the accumulation of facts, but also for critical reflections aimed at challenging existing conventions, ideas and forms of reasoning, by revealing their socially constructed origins, their implications and their limitations with respect to transformative processes".

Emancipatory change is not simply change for its own sake, but, rather, change that reflects democratic and egalitarian interests. Gitlin (1990:241) sees emancipatory change as being "... concerned with the commodities [for example resource materials] produced in schools because commodities reflect autonomous relations". Apple (1986:82-83) suggests that the use of a particular curriculum reflects relations between teachers and students, and for this reason curricula [or materials] which can transform authoritarian relations within teachers' working environments and between students and teachers is of central importance to notions of emancipatory change. Giroux (1981:220) notes that emancipatory interests cannot be defined out of context and argues that the goals of emancipation are not "... like shopping lists that one draws up before going to the supermarket: they are goals that are struggled for and defined in specific contexts, under specific historical conditions". This suggests that researchers interested in emancipatory change must

> ... work *with* those studied and the wider community both in understanding what are the problems and in interpreting reality ... which leads to conscious action towards a common goal ... and must take an openly political stance ... and must push for issues of social justice and equality ... (F)urthering a more substantively critical and egalitarian relation between researcher and community members ... [will] encourage an 'object-subject switch' ... This switch transforms the research participants from manipulated objects into active critical subjects (Gitlin 1990:249).

In Chapter 2 and 3 the choice of emancipatory action research was justified as an orientation to the research undertaken during this study and the perspective of collaborative self-reflective inquiry which was to be undertaken by participants in social (including educational) settings was seen as a means whereby the participants (the teachers) could improve their classroom practice and transform education. My assumptions at the time reveal a confidence in the power of emancipatory action research as a major vehicle for teacher empowerment, an increased understanding of their practice (which would be grounded in the implementation of critical classroom pedagogy) and of the situations in which the practices were to be carried out. Emancipatory action research was also seen as a means of eliciting teacher participation in a materials development project, in which materials would be developed through the processes of self-reflective inquiry. I, like Walker (1993:105), assumed that practitioner engagement in action research would logically (and inevitably) develop into critical reflection on schooling and society, and that due to the political changes in broader society, teachers would welcome this

process of engagement. While this was true in many cases, I found that many teachers were not familiar with the notion of teachers as curriculum shapers and did not see themselves as transformative practitioners, and were often concerned only with new 'methods', 'new resources', 'new ideas' and strategies to implement 'new approaches'.

Accepting, and realising, the intensity of the length of time which is necessary for learning the skills of reflective practice and developing commitment to it (coupled with real time constraints and a lack of a supportive infrastructure or experience of reflective practice), caused the inquiry in this research to be focused on *the conditions which may be able to make emancipatory action research both possible and feasible* (see Chapter 5). Coming to an understanding with teachers of possible new roles for themselves as curriculum developers and/or materials developers, was a time consuming process in which the possibilities and implications of these roles needed to be explored (see 5.4, 5.5 and 5.6). Viewed retrospectively, the situations in which I held regular workshops at schools which were based on relationships of trust and collaborative partnerships and which focused on the development of new ideas and materials, proved to be the most 'successful' sites or 'examples' of emancipatory action research in the We Care Primary project. In this context teachers were afforded time to discuss their practice, trial new ideas and reflect collectively on the activities and the process of materials development within the broader context of reflecting on the ideologies, constraints and political issues which impact on their lives and teaching practice.

My experience as a 'facilitator' of emancipatory action research (see 4.3.5.1) showed that both the teachers and I needed to acquire technical and practical knowledge and experience, as well as emancipatory knowledge, and that all three 'modes' of action research (see 3.3.1; Grundy 1982; Huckle 1995a; McTaggart 1991a) needed to contribute towards the successful application of action research in participatory materials development, albeit with a critical interest [10]. Walker

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[10] Whitehead and Lomax (1987:178) contend that the 'structure' or taxonomy created for action research by Carr (1985) in which he identifies the technical, practical and emancipatory approach, appropriates action research, and "... demotes it from a position from which it challenges social science as the only way of understanding education, to a position in which it is subsumed by traditionally competing social science paradigms." They contend that educational action research is an educational way of understanding education, with distinctive educational values which underpin it. They believe that action research describes "... the activities that people engage in

(1993:109) argues that "... emancipatory knowledge cannot be divorced from technical or practical knowledge ... and more than emancipatory rhetoric is needed to translate political commitment into transformed educational relations". Davidoff (1993:76) notes

> ... the emancipatory bandwagon, while offering a challenging and exciting journey, has not, I fear, begun to address the issue of how difficult it is to become a 'real' emancipatory action researcher in South Africa ... It is my belief that in South Africa at present, and traditionally, most of our educational structures mitigate against the development of action research praxis. Hence the importance; hence the difficulties.

My own experience supports the perceptions of both Walker (1989, 1993) and Davidoff (1993). In searching for rigour, validity and 'success' I support Walker's (1989:6) questioning of what counts as 'legitimate emancipatory action research' when she distinguishes between the academic recognition of action research (by mainly university-based intellectuals) and the engagement of teachers in

> ... developing an empowering and democratic educational discourse which redefines teaching as intellectual work ... This notion of action research attempts to capture Boomer's (1987) idea of 'deliberate learning' and the practical and experiential knowledge that reflection-in-action facilitates.

In reviewing the emancipatory action research process in the We Care Primary materials development project, the evidence from the majority of the teachers in the project suggests that they do not really view themselves as 'researchers'. This was revealed by the lack of engagement on a full time basis in questioning their own practice in the interests of ongoing professional growth. As Philcox (1991:86) puts it, the notion of action research "... did not have much meaning to the teachers ..." (although notions of planning, participation, reflection, trialing activities and change did). Their involvement in the research activities cannot be described as

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which they are publicly and systematically attempting to improve educational practice ..." and they do not accept that action research is something that can be constituted and reified by categories drawn from social science. They further criticise this perspective for ignoring the mutual interdependence of the differing views of social science presented by the three positions on action research. Lomax (1985, cited in Whitehead and Lomax 1987:178) notes: "... I see educational action researchers constituting their own research and in the process showing how they are selectively *using* social science as part of their professional practice and their understanding of this practice".

personally 'rigorous', nor did any of the teachers independently collect their own data. Given the conditions under which most of the teachers involved in the project teach (see 2.4.1) and a lack of a reflective culture in South African schools (Robinson 1994), as well as realistic expectations given the limited contact time I was able to spend with teachers on refining the theories and processes, 'action research', as described by critical educators such as Carr and Kemmis (1986), McTaggart (1991a, 1991b), Grundy (1982, 1987), Winter (1987), these theories constitute little more than rhetoric. In questioning the 'applicability' of theories of emancipatory action research in a South African context, I support the position and the questions which Davidoff (1993:82) raises in her comment:

> ... I would like to tread with caution around the seemingly absolute claims that Grundy and Carr and Kemmis [and other action research scholars] tend to make about emancipatory action research: "symmetrical communication"; "true consensus"; "control of education" ... and perhaps think, in our context, more fluidly about first steps like teachers welcoming 'outsiders' into their classrooms, or wanting to become more creative, or actively engaging in materials development [and environmental education projects or lessons which were different from the way teaching in environment studies was done before]. These gains, it would seem to me, are real steps towards emancipation".

Through the development of a series of resource materials with teachers, and through wide ranging workshops and the development of supportive conditions in which opportunities for reflective practice were created, a number of participating teachers seem to have altered aspects of their practice and some indications on new ways of reflecting on their practice were evident (I1, I2, I4, I5, I6, I7, I8, I9, I10, I11, I12, I14, I15, I16). Some "... real steps towards emancipation ..." (*ibid*) in the We Care Primary project may be reflected through the evidence of:

- Teachers reflecting on the trialing of activities;
- Teachers trying out new ideas, refining and redeveloping activities as a result of their engagement with processes of reflection-in-action;
- Teachers attempting to use new (and unfamiliar) resource materials;
- Teachers making choices about the resource materials they wish to use;
- Teachers compiling collections of lesson materials and pupil work for sharing and comment from colleagues; and

- Teachers taking part in action committees and volunteering for ongoing involvement in the project as environmental education support teachers.

Through engagement with/in this project a start has been made towards change in some junior primary classrooms. Interviews, reflections on the materials which were developed, video clippings, samples of pupil work, an expanding national network and ongoing interest and feedback from teachers in the field reflect how much has been done (DF1-160). However, as Hull (1991:103), reflecting on an emancipatory action research project in the South African context, notes:

> ... (a) difficulty facing any emergent knowledge paradigm is that no infrastructure exists in which to set it. In the case of teacher action research the approach also goes beyond the grain of what many teachers themselves have come to understand as the nature and limitations of their professional role. It would be mistaken to expect too much from a single three [in this case four] year study.

The 'achievements' of the emancipatory action research process embodied by the We Care Primary project lies therefore not in a perspective of 'success' defined by armchair experts or academics on emancipatory action research, but *by a perspective of 'success' defined by the emerging changes within the project, and the ongoing extension of the project*. Significant about the project is the demonstration, through the redevelopment of the We Care Primary pilot materials in phase one, the ongoing development of the We Care Primary project packs with teachers, and the development of collaborative partnerships for curriculum development and INSET, that action research is one way of offering teachers a new framework in which to conceptualise their roles and the work they do (Hull 1991). Through engagement in action research processes teachers are able to grasp the right to participate in the creation of new ideas, new knowledge and new ways of thinking about teaching rather than simply implementing 'new approaches' handed down by the government or an outside agent. Given the contextual constraints and pragmatic factors, and my own capacity as an individual (at the time I was a student and a junior researcher), my having demonstrated this possibility in the context of an education system at risk could be viewed as an achievement in itself.

Possible emancipatory outcomes for this project may well be reflected by teacher participation

in the project, which seemed to encourage more flexible approaches to teaching environmental education, teachers' trying out and working with new materials. The development of confidence and feelings of self-worth reflected by a growing willingness to experiment with alternative methodologies and patterns of classroom organisation and to share these experiences with colleagues provides further evidence towards this end. However, at the end of four years of working *with in* this project as teacher, facilitator, researcher, intellectual, learner, co-learner, collaborative materials developer (multiple roles taken at different times in different contexts, often simultaneously), I am still not certain whether it is in fact possible to 'emancipate' someone else[11] and I am still deliberating on the mythical and elusive qualities of the concept in real terms

For me (a university-based researcher) the We Care Primary project was an action research project which consisted of multiple cycles of inquiry (see Chapter 5 and 6.5) in which I had a predefined role (see 3.3.3.5), but for many of the teachers it provided access to resources, to collaborative meetings and discussions, to 'new ideas' which they shared with each other, and to expertise (which they increasingly associated with my role). These sessions did enable many of the teachers to become reflective about their teaching and about conditions which enabled 'better' ways of working together around common issues, without necessarily transforming them into action researchers. Walker (1989:8) argues that if teachers have developed the ability to reflect in some way on their practice, they are acting as teacher learners and teacher researchers. If they are reflecting collaboratively with colleagues, they are working with the collaborative ethos of emancipatory action research and democratic intellectual production, even if they are not 'researchers' according to the academy. Sarason (1982, cited in Walker 1989:8) identifies the key question for the practitioner as being "... how the change process can enable the teacher to perceive his or her role differently; that is to perceive the role not as threatened or derogated, but as expanded in scope and importance".

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[11] Ellsworth (1989) urges critical eductors to abandon crusading rhetoric and begin to think outside of a framework which sees the 'Other' as the problem for which they are the solution. In doing this we may shift the role of critical intellectuals from universalizing spokespersons to cultural workers who do what they can to lift the barriers which prevent people from speaking for themselves. Lather (1991:47) notes that through this process critical pedagogy is problematised in ways which may *resituate* emancipatory work, rather than destroy it.

The action research process holds this promise and possibility for educational change and transformation (Walker 1989:8). However, it is prudent to note that the theory of action research defines an ideal process. If one tries to implement this ideal and measure your success or failure against this ideal, the enterprise is doomed to 'end' in failure, being caught up in mere rhetoric and a reified notion of reality. If one accepts the difference between the ideal and the real, and that "... understandings about methodology, theory and practice develop dialectically through the research" (Robottom 1992:22), then 'success' in the research enterprise can only be 'measured' in relative and pragmatic terms, taking full account of the complexity of the human condition (see 6.1). As Deacon and Parker (1991:117) note, "(o)ne evaluates one's progress not by looking to see how close one has come to the ideal, but by looking at how far one has moved from the starting point". Reflecting on the shifts in orientation and approach to research, materials development and teacher participation over a period of four years, considerable change and growth within the We Care Primary project becomes evident (see 5.7), which in turn reflects the ongoing potential for further growth and development of the project (see 6.5) as a legitimate transformation initiative.

The shifts and changes with/in the research process illuminate Robottom's (1992:22) argument for a view of research which is "... responsive and essentially contextualised ...", and Lather's (1991:110) argument that "... an emancipatory, critical social science will develop out of the social relations of the research process itself, out of implementation in research praxis".

Through ongoing research, interaction and a reflexive response to the 'weaknesses' which emerged from phase one, the project, located within the notions of critical theory, took on a reflexive stance during phase two which enabled, through ongoing response and inquiry, new ways of developing resource materials with teachers. This emerging orientation within the research project helped to show that, through grappling with the notions and assumptions of critical theory and emancipatory action research with teachers, enhanced approaches to participatory materials development in environmental education are possible. This reflects Plant's (1995:16) argument for a new way of perceiving our practice, in which "(t)he past is no longer demarcated from the present in some form of binary opposition; it is instead an on-going referent for the new". He links this perspective to Beck's (1992) concept of 'reflexive

modernisation' which "... seeks not to confront the present, but rather, how the present is giving rise to a new future" (*ibid*:16).

Deacon and Parker (1991:118) note that "... ideally action research ought not to end - it ought to be an ongoing process". The We Care Primary project has succeeded in starting a conversation in junior primary environmental education, not least through the collective and individual efforts of teachers in schools, which has the potential to continue. I thus 'end' this thesis with a vision of possible journeys for further enquiry which extend from *with in* and go *beyond* this report.

## 6.4 MULTIPLE 'ENDINGS' FOR THE WE CARE PRIMARY MATERIALS DEVELOPMENT PROJECT

> *We need to give ourselves over to our experience, without knowing what it is, trusting that our understanding will grow as we proceed. To participate truly in this experience, we must marry the unknown. The only belief is the question itself: Love is a matter of leaping out into the sky* (Strieber 1987:285)

Through this report I have shared some perspectives on my journey of inquiry into environmental education research and environmental education materials development. In phase one I described a journey of inquiry *towards* socially critical environmental education. This phase represented my 'getting to know' environmental education, becoming familiar with and learning to understand what then appeared as a theory/practice divide which I tried to close through praxis, made possible through processes of 'doing' action research. Through this process a range of themes or 'sites of change' emerged (see 3.5 and 4.2), each of which presented further challenges for ongoing research within the project.

The second phase of the journey did not 'start afresh', but took a critical and reflexive stance to the 'weaknesses' made visible through the emerging themes, and this report presents accounts of responses to three of the themes highlighted at the 'end' of phase one (see 5.4, 5.5 and 5.6). The second phase of the research journey was presented as a journey *with in* socially critical environmental education and reflected ongoing engagement *with in* the theoretical assumptions

of critical theory and socially critical environmental education. This engagement led to the realisation of the importance of establishing conditions in which participatory materials development, reflective practice, teacher empowerment and emancipation (through action research) processes can take place. A number of action-based projects and activity development processes were initiated, and provided the impetus and ideas for the development of a range of new resource materials in the We Care Primary project (see figure 2.3 and 5.2). A reflexive stance to the research emerged during this phase which led, through critical reflection on the research position and theoretical assumptions, to the realisation that this research report is merely (and can only be) a representation of one particular perspective of the research process (albeit with a few 'voices' woven into the text), and that further searching for meaning remains possible within the project, representing possible journeys *beyond* socially critical environmental education.

In presenting my story of this research journey I now wish to offer possible perspectives and further opportunities for ongoing research in environmental education materials development. These perspectives or options are grounded in my experience of this research journey, and in the evidence collected in multiple sites along the way (DF1-160). The following possibilities and options for further research represent brief overviews of those research areas which emerged throughout the research project which I was not able to revisit and map out in this research report. As such these areas present the potential which this research project offers for revisiting experiences with new perspectives and as such enable me (and my fellow travellers) to further our journeys in learning of social transformation.

### 6.4.1 Recognising multiple cycles of inquiry in an action research project

In learning to do action research through this project, I realised that action research is not merely a 'set of techniques' or even an 'approach' which can be 'implemented' to realise aims or goals within a research project. Action research represents an orientation to research which is ongoing, and which questions educational practice, the practice of the researcher/s and the assumptions which 'drive' the action research orientation, thus making it a multi-levelled and inherently reflexive inquiry process. During this research project I was confronted with notions of technical

action research, practical action research and emancipatory action research. I tried, at various stages in the project, to 'classify' the kind of action research I was doing, and respond to what I then perceived to be 'weaknesses' in my approach. I was also confronted with the dilemmas of attempting to 'adhere' to a particular 'emancipatory' notion of action research, which was inadvertently, and paradoxically, couched in a logic of domination which foisted an ideology on the research process, albeit in the guise of the 'critical'. Whitehead and Lomax (1987:181) argue that for emancipatory action research to be couched in an emancipatory discourse, the *form of the discourse* should be emancipatory, and should enable those engaged in the discourse to "... retain their own definitions of reality, whilst opening these up to exploration by others".

I was further confronted with representations of action research as cycles of inquiry containing elements of planning, action and reflection. My initial encounters with this process in phase one of the research presented a 'simple and easy' interpretation of these events, and I was able to present the research activities as a 'cycle' of inquiry. However, as themes or 'sites of change' and further inquiry emerged, I was confronted with the reality of pursuing simultaneous inquiry processes into diverse areas with/in the research project. I found myself bound up in multiple cycles of inquiry as I tried to understand and respond to the ongoing developments within these diverse, yet interrelated areas.

In the second phase of the project I was thus researching (through cycles of action research):

- The research process itself (see 3.5.3; 4.3.5; 5.4.1; 6.3 and 6.4);
- The development of conditions for changes to occur (see 5.4);
- The development of materials (see figure 5.2 and see 5.5);
- The broader development of the project (see figure 3.3 and figure 3.4);
- The development of INSET and curriculum development processes with teachers (see 5.6);
- The development of collaborative partnerships within the project (see 5.6);
- The tensions between participatory materials development and educational publishing (see 4.4.2);
- Movements and changes in the broader educational context (see 5.7); and

- My own role as researcher in this process (see 4.3.5.1).

In the light of the above I find the representation of action research as a singular cycle of inquiry (see figure 3.2) to be a simplistic representation of a highly complex and interrelated process which is aptly described by Janse van Rensburg (1995:167, citing Doll 1989:247) through the following observation: "'Complexity assumes reality to be web-like with multiple interacting forces ...' and observers as insiders rather than outside the web". In reviewing the literature on action research, discussion of multi-faceted complexities in action research processes have been surprisingly absent, with only a few authors (Bawden 1991; Ebbutt 1985; Elliott 1991; Robottom 1992) offering some insights into action research as a multiple, multi-levelled and highly complex process.

The question which I thus pose to myself, and to fellow researchers, asks of action researchers *within* processes of action research to seek further clarity on the nature of complexity within action research, and to clarify the multi-levelled and multi-faceted nature of inquiry into educational settings and social life seemingly made possible through action research.

### 6.4.2 Confronting the challenges of social transformation and change

A growing awareness of the nature and extent of the environmental crisis has predictably led to calls for wide ranging change and transformation, and, amongst other perspectives, a call for change in which we actively challenge those assumptions and delusions of modernism which have contributed to the development of global environmental risks and threats to life on earth. These calls for change place the call for transformation within the arena of social transformation (Janse van Rensburg 1994, 1995; see 2.2.3). Social and educational change and transformation have been central to the research activities in this research project (see 5.7). The project was planned (see Chapter 2), developed (see Chapters 3, 4 and 5) and reviewed in the light of its transformatory potential (see Chapters 5 and 6) in a society impatient for change and transformation.

Taylor (1995) notes that environmental education and engagement with resource materials and

resource materials development can help us refocus our thinking on education (see 2.2.2 and 5.7). In this research project, the ongoing engagement with developing 'better ways' of materials development with teachers led to related inquiries into the conditions which make processes of change possible. Through this inquiry process, the complexities of educational change were accentuated and are presented as challenges for educators concerned with the process of change and transformation within schools and wider society. An orientation to engaging with change was described which challenges environmental educators to confront the complexities of change through engagement with/in processes of change in their daily lives and work (see Chapter 5).

This perspective sees *environmental education as a responsive process of change* in which environmental educators work *with in* local contexts to develop resources, tools and action competencies to encourage and engage in processes of change (Janse van Rensburg 1995). For transforming education, the challenge thus lies in the ability of environmental educators to work collaboratively *with* teachers *within* local environmental contexts to support and participate in collective change efforts, be it the development of materials, curriculum, INSET programmes, action-based projects or problem solving activities, amongst other possibilities. Environmental educators should be aware of the realities and complexities of the change process and realise that change is a long-term process, and that should support be required, it needs to be provided for the full life of the initiative.

This research report offers only a brief insight into some of the complexities of change in the formal education sector. It demonstrates the realisation that confronting the challenges and complexities of change in realistic and meaningful ways is possibly one of the most daunting realities facing South Africans as we begin to confront the many legacies brought about by apartheid ideologies, modernisation, the histories of both mis-education and poor education, decades of separation and limited resources for the process of transformation.

### 6.4.3 Clarifying participatory orientations to materials development in environmental education

Ongoing materials development within the We Care Primary project provided experience and

insight into processes of materials development which actively challenge traditional models of materials development, and place the initiative for research and development of new materials in the hands of collaborating groups of practising teachers and other educators. Participatory orientations to materials development which view the teachers as being able to *generate* new materials are possible, given relationships of trust, enough time to work collaboratively on the development of appropriate ideas, and a supportive and reflective environment in which ideas are tried out, discussed, critically reviewed by colleagues and reworked on an ongoing basis.

Reflecting on the process of materials development that emerged through phase one and phase two of this research project illuminates the following features which can be highlighted as contributing to the clarification of participant-centred approaches to environmental education materials development:

- School-based workshops and school-based curriculum and materials development initiatives provide a useful context to focus on local environmental issues as a source for the development of curriculum activities;
- Whole school or whole department interaction was more conducive to schools developing curricula for environmental education themes or topics which would be collectively implemented as part of the school or junior primary department's activities;
- Ongoing workshops at schools which are based on established working relationships with teachers are more effective for the development of local, issue-based resource materials and provide opportunities for participatory research into teaching and contextual issues;
- Materials development workshops provided opportunities for professional development through reflection and action around new teaching methodologies, and the development of relevant activities for classroom use; and
- 'Empowerment' of teachers does not occur as a result of external intervention or the transferral of information (Gore 1989), but rather through a process of creating, supporting and participating in the conditions which enable social interaction and critical reflection to take place around common issues.

Innovations which are generated *with* teachers, enable engagement with the real life contexts of teachers, and the innovations are thus improved through a process which reflects and engages the conditions faced by teachers. Further inquiry into innovations of this nature are thus possible, and necessary, if we are to learn how to support and develop environmental education within formal education structures in meaningful and lasting ways.

### 6.4.4 Responding to contextual constraints in participatory materials development projects

Through this research project and the engagement with participatory materials development in phase one and phase two of this project, it became obvious that participatory materials development was much more than 'rubber stamping' or approving, or even trialing and testing of activities and ideas. It comprises an interrelated process of engaging with diverse issues of teaching and learning, classroom practice, the constraints of schooling and the broader socio-economic milieu. Some factors which emerged as being relevant to the development and use of materials in schools in the We Care Primary project are: changes in pedagogy; the development of processes and skills for participatory curriculum development; the development of action-based environmental education projects; and a consideration of the aims and purpose of education. In each context or materials development process, different contextual and educational aspects become more (or less) pertinent to the process (illustrated by the two stories in 5.5).

Robottom (1992:24) sees educational contexts as a "... complex of changing power relationships", and argues that educational research needs to be responsive to the substantive context and needs to engage the substantive issues (those issues in terms of which the substantive context can be understood). In this research report I was only able to engage with some of the substantive issues which were pertinent to the development of the We Care Primary materials. The engagement (through ongoing inquiry) into the relationship between materials development, curriculum development and INSET (see 5.7) represents such an attempt. Robinson (1994:257) indicates that there are a multitude of additional issues which impact on the use and development of educational materials, teacher development and educational

transformation in its broadest sense. Some of these 'substantive issues' (amongst others) which were illuminated through this research project are:

- The authoritarian nature of many schools, with principals often preventing teachers from participating in change initiatives through authoritarian control or a lack of support;
- Poor socio-economic conditions and lack of educational support from parents, which makes the task of the teacher onerous;
- The restrictive role and influence of school syllabi and subject disciplines on innovation and innovative materials development projects in schools;
- A lack of teacher experience in making curriculum choices and choices about the materials which they wish to use;
- Little or no experience of reflective practice and ongoing professional development; and
- Limited access to libraries and other resource materials, which creates a culture of impoverished learning environments for both teachers and pupils.

Each one of these areas could form the focus of ongoing inquiry within materials development projects, the challenge being to realise the interdependence of these issues and find ways of doing research which are responsive rather than "... pre-ordinate, fixed and independent of the substantive context" (Robottom 1992:24).

### 6.4.5 In-service teacher education, materials development and curriculum development

In the search for ways to respond to the interacting issues which emerged as part of the process of materials development, a process of inquiry into the relationship between materials development, participatory curriculum development and INSET was undertaken (see 5.6). The following aspects, warranting further inquiry, emerged from this process:

- Finding ways in which participatory materials development and participatory curriculum development could become mutually interdependent processes presents a challenge in a system which is gearing up for large scale curriculum transformation;
- Further inquiry into the role of innovative resource materials as support for curriculum

development initiatives is necessary, as is further inquiry into the way in which participatory (localised) curriculum development will influence the development of materials, seen especially from the perspective of national publishing;

- The role which innovative materials may play in INSET (and PRESET) programmes, and the way in which the materials may be used as a tool for reflection on practice (for example, the analysis of activities to explore and reflect on pedagogy and classroom practice), needs to be investigated further;
- Aspects of ongoing support and sustainability, and ways of participating in INSET projects in ways which address the interests, teaching contexts and needs of teachers, and not the needs or ideals of the INSET provider (i e. who sets the agenda?). Questions on how long 'successful' INSET needs to be sustained, and the quality of interactions needs to be investigated further; and
- The development of collegiality and teacher collaboration through authentic participation remains a challenging process, especially when seen in the light of limited resources for INSET. Fullan (1991:132) notes that the degree of change in an INSET initiative is strongly related to the extent to which teachers *interact* with each other and with others providing additional ideas and perspectives. Significant educational change consists of changes in beliefs, teaching style and materials, which can come about *only* through a process of personal development in a social context (Fullan 1991:132). How we are to create the opportunities for teachers to become involved in such processes in sustainable ways, remains a question high on the priority list of educationists with transformatory ideals.

### 6.4.6 Partnerships and networks in participatory materials development projects

Throughout this research project the presence of collaborative partnerships has been a distinct feature of the project and started with the original partnership between the WWF (SA), TOTAL (SA) and Stellenbosch University to develop the 1987 We Care Materials. Since then, the partnerships with TOTAL (SA) and the WWF (SA) as funders of the project have been maintained. However, other productive partnerships have all contributed significantly to the possibilities of this research project. Examples include the initial development of the We Care

Early Years draft materials (see 2.2.3) by colleges of education, the printing and dissemination of the We Care Primary pilot materials by Share-Net and the trialing of the pilot materials by a number of national environmental education organisations (through the Share-Net network). Possibly the most significant partnership within this project, which had a defining influence on the project, was that of a strategic alliance with an educational publisher (Juta & Co.) which enabled the research and development to proceed through a research unit at the University of Stellenbosch (EEPUS). The involvement of an educational publisher enabled many of what would otherwise have been extremely high costs, to be covered through this partnership. The quality of the products were improved through this partnership, and national exposure for the project was sought and made possible through ongoing liaison with the national marketing force (see 4.4.2). Being based at a university provided the project with the legitimacy and status often associated with university-based research projects, a factor which helped to establish the credibility of the project as a research initiative. A further significant partnership with/in the project was the 'informal' liaison with subject advisors within the department of education. This liaison enabled 'access' to teachers, and created openings for participation in policy making and the development of ongoing INSET programmes which were supported through the partnership. The project thus became an example of interlinking partnerships between an educational institution (Stellenbosch University), the private sector (TOTAL and Juta), an environmental organisation (WWF (SA)) and the state (the education department and media centre).

The formation of partnerships have not only been formal in nature, but included informal partnerships and networking through *inter alia* EEASA, the Action Research Network, the Junior Primary Forum and the Western Cape Materials Development Forum, all relevant to the interests of this project. The immense value of diverse partnerships and networking within the We Care Primary project is visible throughout this report, and cannot be calculated in concrete terms. Hardman (1994:47), in reviewing the position of non-governmental organisations, gives the following perspective on the formation of partnerships:

> ... part of the strength of NGOs [and university-based initiatives like the We Care Primary project] was in their diversity, smallness and independence, which allowed for a focus on quality, consultation and participation, in the changed circumstances a more helpful approach will be one of co-operation and combined effort focussed on integrated and fundamental change. Surely, it is not appropriate for this movement to become

> highly competitive but rather to integrate strengths to develop organisations which can work with and in schools to focus on quality through transformation. Clear products of this approach will be the emergence, through participative curriculum and materials development, of relevant materials in the hands of teachers who feel a sense of ownership for the learning process occurring in their classrooms ... The position which NGOs will need to take will be one of supporting educational development in partnership with the state.

This process is much talked about in transformation discussions and policy development in South Africa at present, and, as such, provides an important focus for further inquiry.

### 6.4.7 Participatory materials development and educational publishing

A central influence in the We Care Primary materials development project (especially during phase two of the project) has been the formation and ongoing development of a partnership with a national educational publishing company. The involvement with Juta Educational Publishers was motivated by the need to find new ways of developing materials within the publishing industry, traditionally concerned with processes of materials development which reflect RDDA models of change. Educational publishers are increasingly beginning to develop alternative ways of materials development, a factor which results from:

- Pressure from within the industry (increased competition for good quality materials);
- New demands placed on the publishing industry by the socio-political environment which is demanding democracy and transparency (Samuel 1993), quality, relevance and transformation of books (Masokoane 1993; Potenza 1993);
- Affirmative action policies (Cachalia 1993);
- The ending of corruption in the publishing industry (Proctor and Monteith 1993); and
- Uncertainty relating to curriculum development procedures and content.

As experience in this project has shown, developing materials with a participatory orientation is not without tensions. Some of the more apparent tensions which emerged through the interaction and partnership with the publishing industry in this project were:

- The time needed for participatory materials development which contrasted with the need

for 'fast' products;

- The high costs involved in supporting the processes of participatory materials development and the relatively low profit margins and the need to keep the costs of materials as low as possible for the school market;
- A lack of familiarity with participatory processes of materials development within the publishing industry, creating a situation which leads to misinterpretations of the process involved (in which the efforts are often 'judged' with the same perspectives afforded to materials developed through the easier, less time consuming and more traditional approach);
- The tension between localised materials, developed with 'local insight and a local flavour' and the demands of a national marketplace, which has implications for the generalisability of content, sensitivity to a wide range of contexts and teaching environments and demands that the materials provide for high levels of flexibility; and
- The tendency to rely on 'old style' marketing strategies, whilst 'new' materials which support changes in teaching and learning practice demand a more interactive, responsive marketing approach.

The role of educational publishing in change and transformation therefore makes an interesting and challenging focus for further inquiry.

Relevant to the relationship with the publishing industry was the development of an author support programme which aims to support and develop the skills of new authors entering the field of writing educational materials. The approach taken in the We Care Primary project has been one which, instead of emphasising the notion of the author as expert (as in traditional approaches), focuses on developing authors as participants in the process. These authors have been participants in the We Care Primary INSET programmes, and are developing not only the skills of authorship, but also the skills of providing support to other teachers to develop environmental education in classrooms. The development of this author support programme has led to a small research project which highlights the process of engaging with teachers in a different, and highly skilled dimension of participatory materials development (Greeff, B.Ed assignment, October 1995). This research process has highlighted the following as possible foci

for further research in this area:

- The role of research skills and experience in using alternative materials as support in writing materials;
- Teachers' experience of alternative teaching methodologies and how this affects the nature of the materials they write. The need for methodological support to authors during the period of transition seems necessary, and this may be essential if books are to become more interactive, process- and competency-based and more interesting and relevant; and
- In writing 'new' materials, knowledge of the publishing industry and publishing process (as part of the materials development and writing process) is necessary to inform the development of materials in such a way that they are appropriate for publication.

Many of these issues formed part of the ongoing process of inquiry within this research project, and often formed the focus of a responsive process of action, which attempted to address the tensions as they arose in context. However, the details of this inquiry process have not been included in this research report, and still form an interesting subject for further inquiry, especially seen in the light of the fact that I am now employed within this industry.

### 6.4.8 Active learning and pupil participation in junior primary environmental education

Although the resource materials developed through the We Care Primary project were based on the principles of active learning and participatory pedagogies, these aspects did not form a major focus of the research project. Theories of learning and the development of active learning in classroom contexts were not a focus of the research enterprise, although incidental evidence and feedback from teachers (through trialing and developing activities) testified to the value of participatory approaches to learning in the junior primary school phase. The activities in the We Care Primary materials were developed to challenge behaviourist theories and models of teaching and learning. Analysis of incidental video material taken of environmental education projects at pre-primary and junior primary schools, and reflections of teachers (see 5.5), have pointed to the real possibilities that younger learners are able to participate in solving

environmental problems, to develop critical thinking skills, to act as catalysts of change, and to become environmentally literate. These perspectives challenge many of the traditional assumptions about young learners being subjected to developmental theories which determine 'approaches' to environmental education which seem to suggest that young learners (between the ages of five and nine) should only be subjected to imagination, sensory awareness and discovery experiences in environmental education (Opie 1992, cited in O'Donoghue 1994c:40). However, as this was not a key research focus for the project, further inquiry into active learning and action-based projects in the junior primary school phase could provide an interesting and challenging focus for further research in environmental education.

### 6.4.9 Practical considerations for participatory research in environmental education

In writing about research methodology, Popkewitz (1984:ix) notes that "... research [is] a complex process in which particular data collecting techniques assume meaning and significance only in relation to the assumptions of the larger intellectual traditions in which the techniques are applied". He critiques approaches to, and concepts of research methodology which focus merely on the 'how-to-do-it' tasks of data collection and analysis, which view research as a series of techniques in testing, statistics or observation, practised independently of questions, assumptions or concepts. He notes that failing to situate concepts and techniques within their social and philosophical contexts produces knowledge that is "... often trivial and socially conservative". He also sees the tendency to consider the variety of competing traditions in the social sciences as differences only in techniques as "... obscur[ing] the assumptions and implications of these traditions". In preceding sections of this chapter I have reviewed the assumptions and implications of the research process of this research project both critically and reflexively. For this comment to become more practicable, I now wish to share some of the 'lessons learned' about the more 'practical' aspects of doing participatory research in educational settings. I touch briefly on a number of issues, which, through ongoing engagement with participatory research processes, could be clarified further and could undoubtedly change:

***Researcher / Researched relationships***

In this research project I have had to confront my own role in the process with circumspection,

critical intent and ongoing self-reflexivity. I have had to grapple with the dilemmas of 'teaching' in the research process, of facilitating and empowering 'others' (see 4.3.5.1) and have had to confront realities of power imbalances within the research process. I have attempted, through ongoing critical reflection on my role, and through self-reflexivity in the research process, to grapple with the notions of equality in my relationships with teachers, teacher voice and relations of domination caused by inherent inequalities in both my position as university-based researcher, and the history of South African society. I have also had to work with the position of power which researchers hold when they are able to set the agendas for the research. Gitlin (1990:444) notes that "... (e)ducational research is still [largely] a process that for the most part silences those studied, ignores their personal knowledge, and strengthens the assumption that researchers are *the* producers of knowledge." In the We Care Primary project, I am still providing the dominant voice, and I have not engaged fully with the relational dynamics of authentically representing teacher voices in the research reporting and growth. Much of the interactions during our encounters is lost due to my limited capacity (and the time consuming task) of capturing this data and the voices of teachers in more authentic ways. Due to the many contextual constraints, and my lack of expertise in doing participatory research, I have not fully been able to "... engage fully with practitioners at both the level of question posing and the interpretation of the findings ..." (Gitlin 1990:446) and have not adequately addressed the fundamental change in research procedures related to the development of authentic, multi-vocal voices in the research process. Britzman (1986), Diamond (1993), Dudley (1992), Elbaz (1991), Gudmundsdotter (1991), Lather (1991) and Lester (1993) see narrative and stories as a way of authentically representing teacher voices in the research process, a concept which provides new methodological challenges for environmental education research.

***Epistemological positioning, and the generation of knowledge***

As repeatedly noted and reflected throughout this research report an epistemological position which views knowledge as socially constructed was supported and purposefully developed throughout this research project. The project thus embodies engagement with 'working knowledge' which was generated by dialogue, encounter and reflection of the participants in the research process. The development of this 'working knowledge' was able to provide frameworks and ideas which informed the development of a range of new teaching materials for junior

primary environmental education. The educational critique in this research project was represented by an action-based participatory method of developing materials and curricula which generated 'working knowledge'. This working knowledge was "... transactional rather than transmissive, ... generative/emergent rather than preordinate, ... opportunistic rather than systematic, and idiosyncratic rather than generalisable ..." (Greenall Gough and Robottom 1993:9-12). The opportunities for developing knowledge of our environment, and possibilities for new materials to support the teaching of environmental education, seem possible through the ongoing support for this epistemological position in environmental education research.

***Reading and literature studies***

Throughout the research process a wide range of literature was used to help me gain perspective and understanding of environmental education research. What became interesting was the way in which the readings became meaningful at different points in the research process. Reading much of the literature initially had little meaning, but, as my experience of the research process developed, many of the readings became not only meaningful, but useful tools to help guide the research process. Vulliamy (1990:86) refers to the role of literature studies in research when he talks of a process of "progressive focussing" in which readings and literature progressively help to focus the stages of a research project. He sees this process of progressive focussing as an important element of analysis and notes that ongoing engagement with literature throughout the research provides greater theoretical input into the emerging analysis. In this way choices in reading materials can be guided by the themes which emerge from the data, and engage directly with the perspectives of the research on an ongoing basis. This has been a valuable methodological insight gained through this research project, and as such I offer it as a guide for ongoing research in environmental education.

***Time constraints***

The influence of time within a research process has far-reaching implications for research possibilities and extent, and also for the quality of the research enterprise (and the materials developed). Although time is generally an abstract concept open to diverse interpretations (illuminated by the poetry of T.S. Eliot) and thus difficult to discuss in concrete terms, I would argue that in general, a research process which is participatory and truly democratic will take

longer than many other forms of traditional research. The We Care Primary project bears witness to: the time involved in establishing relationships of trust; gaining access to research contexts in authentic ways; organising meetings; explaining and negotiating research procedures with different groups; developing materials through ongoing participatory meetings and workshops; discussing interim findings; developing analyses and a series of drafts; and taking subsequent action on the research process. The balance of time spent with teachers, as opposed to time spent in an office or library doing research, is much altered. This has obvious implications for costs and the necessity of integrating the research process into other ongoing activities and actions.

Counter arguments against the problematics of time consuming processes, however, hold that *an effective process is worth the time taken*, and that *in the long run the time taken may be even less because the research process is combined with educational and action phases* (which in traditional research processes are implemented afterwards, if at all). Added to the issues of time faced by researchers, teachers are caught in a web of time constraints which makes participatory research with teachers a difficult enterprise. While researchers can take time out of their daily schedules to attend meetings, teachers are faced with the dilemma of not being able to leave classrooms during working hours (Hall 1984). This means that those teachers participating in after hours research initiatives (not directly 'approved' by education departments) must be highly motivated and certain that the efforts will be beneficial to their teaching. As experienced in this research project, this presents a major pragmatic constraint to doing participatory research on an ongoing basis.

***Data collection, analysis and validity accounts in participatory research***

As indicated above, time constraints and the pressures of being a participant in participatory research processes often create situations in which researchers struggle, or are even unable, to collect data in systematic, orderly ways followed in alternative research processes. I have, for example, on many occasions become so caught up in workshops, discussions and arguments, that I have neglected to capture the conversations taking place. Involving teachers in data analysis has often been relegated to superficial 'audits' of my interpretations, rather than sustained and systematic procedures of analysis, the major exception being in the case of the materials development workshops (see 5.5). Data handling and analysis, in these workshops, followed a

process similar to that which Robottom (1992:21) refers to as 'iterative reporting'. Through this process, draft documents of our discussions were drawn up and led to successive versions of the materials (see figure 5.2). By doing this I hoped to enable the teachers to shape the accounts of the materials being developed, as well as shape the materials in more detail, and thereby improve, through a process of reflection and negotiation, the quality of the materials and the validity of the research account. This was made possible through the ongoing contact (one of the conditions for participatory materials development; see 5.4) which I was able to establish with the groups of teachers involved in the development of the project packs. Developing authentic participation in the research enterprise which enables the 'insiders' to take control of the research agenda (Robottom 1992), can best be done with smaller groups of participants in situations which are involved with research on an ongoing basis.

***Blurring the distinction between research, learning and action***

Defining the difference between research and learning, or research and action, or theory and practice becomes extremely difficult in participatory research projects. Being a full participant in the project requires that one becomes a co-learner in the research process, open to learning through interaction. During the process of continuous learning through critical reflection, action is stimulated which, in turn, stimulates further reflection, research and learning. Theoretical perspectives thus inform the action, but are simultaneously informed by the research action. The distinctions thus become blurred. Hall (1984:298) notes that "... (p)articipatory research is usually described as having three characteristics: it is at the same time an approach of social investigation, an educational process, and a means of taking action". All these characteristics have been adequately reflected in the We Care Primary project. However, as I found in this research project, the dilemma for researchers engaged in collaborative action research processes lies in one's ability to distinguish between 'research action' and 'action research' elements, and continually to refocus the research action as an inquiry process, guided by cycles of planning, action and ongoing critical reflection. Reflexivity, triangulation, the 'recycling' and sharing of emerging data on an ongoing basis becomes an important focus of the process needed to establish trustworthiness and validity in research accounts. Maintaining perspective on the 'blurring' of boundaries within participatory research is not easy in practice, and requires rigorous pursual of the research enterprise.

***Taking risks***

Taking risks in action research is central to the research enterprise, for it is only through participating in the 'unknown' that we learn to know. According to McKernan (1991:62) action researchers must be able to take risks, for "... in taking risks we expose our competence and beckon failure". As this research has aptly demonstrated, progress can only be made from the knowledge (at the time) of our short-falls. As professional practitioners it is difficult to position oneself for 'failure', as this presents a threat to our competence, and places us in positions of vulnerability - especially when that 'failing' is a public act where others with whom we collaborate are present. Through the process of learning which I have encountered in this research project, I have realised that it is often our interpretations of 'failing' which fail us, and it is the perspectives which we use to 'judge' our practice which create concepts of 'failure'. These concepts are often motivated by a modernist tradition of creating dualisms, in this case between what is considered to be 'right' and 'wrong' practice in research. Nevertheless, I believe that through taking risks, we expose ourselves to 'unknown territories' and through adopting a reflexive and process orientation to research, we are likely to continue learning more about our research enterprise.

***The promise of reflective practice***

Carr and Kemmis (1986:78) maintain that "... all those involved in the research process should come to participate equally in all its phases of planning, acting, observing and reflecting. In this, action research is democratic". Given the contextual and pragmatic realities of doing research in South African schools outlined in the preceding pages of this thesis, I would argue, along with Davidoff (1993:78), that equal participation in action research and participatory research processes is, at present, extremely difficult to realise. Given that the democratic ideals encompassed in the notion of participatory research are worth striving for, the question for inquiry thus becomes focused on addressing the many real constraints of the South African education system. Our questioning may therefore encompass consideration for how we may encourage: equality in research initiatives; reflective practice; teachers as lifelong learners; curriculum as process; the development of a critical consciousness and reflexive processes of change.

I, together with Davidoff (1993:80), believe that there are no straightforward answers, and no blueprints. Certain threads have, however, emerged through this research project which may be able to provide tentative guidelines. As I have repeatedly argued, the sustaining of educational change through authentic involvement of teachers is of primary concern. Given our particular situation in South Africa, I would also argue for educational research projects which start where teachers are and, according to Davidoff (and confirmed through this research project) where they are not, is "... located in a tradition of innovative and reflective practice" (*ibid*). I agree with Davidoff when she argues that this can be the only real starting point for research in South African schools and classrooms, rather than preconceived notions of what constitutes real emancipatory or participatory research. Our concern should therefore be for where teachers are, and not how research should or should not be conducted. This means that, as researchers concerned with change and transformation, we need to "... think big and start small" (Davidoff 1993:80). We need to establish the relationships of trust, open channels for discussions and create the conditions and opportunities for authentic participation through which processes of reflective practice may be developed over time. Starting with teachers also means working with them to develop the skills, expertise and subject knowledge where necessary, a situation which exposes the concept of mere facilitation in participatory research as not very useful. Unless we begin to think seriously about the realities of doing research in relation to the contexts within which it is embedded and in the light of its historical roots, our actions as researchers may continue to perpetuate a culture marked by inequality, domination and exploitation (Davidoff 1993:80).

## 6.5 TOWARDS TRANSFORMATIVE COMMUNITIES OF TEACHERS

Through a description of the research and an illumination of possibilities for ongoing inquiry in the We Care Primary materials development project, I have hoped to provide a view of environmental education materials development which challenges modernist notions of inquiry, development and change. Interventionist movements such as the one represented by the We Care Primary materials development project will not only have consequences for teachers' abilities to control their own work, but will also have implications for the kinds of content and methodologies that will be stressed in primary education. The much needed shift of control over

content, teaching and evaluation from outside the classroom to within the classroom and classroom communities, seems possible. As this project has shown, change is a complex, multi-levelled social process, so these gains will not come easily and it will be difficult to do it alone. It will take thousands of teachers in hundreds of classrooms throughout the country to constantly take responsibility for, and reaffirm their right to determine, what happens in their classrooms. Communities of teachers will have to ensure constant but sure movement in this process by taking small steps away from a system of total administrative control of the curriculum and the person of the junior primary teacher to gain or regain their skills and worth in a context fraught with socio-economic concerns and increasing socio-ecological degradation.

It seems logical that democratic-thinking reformers, who view schools as potential sites for creating a more egalitarian society, will argue for a kind of transformation of education which is founded upon democratic and participatory principles. However, it will be necessary that we maintain a vision of transformed education, while *retaining both an optimistic and a realistic view of current initiatives* if we are going to address the reality of the situation in any meaningful way. The NEPI document on Teacher Education (1992:18) stresses that immense economic and theoretical challenges are involved in supporting teachers towards a critical understanding of their academic disciplines, pedagogies, and the effects of the legacy of the historical, social and spatial realities of daily classroom practice.

The ideals of transformation are always easy to verbalise and recommend. As is shown in this research project, these ideals cannot be translated into immediate results or changes, or immediate expectations which teachers have to strive for. Macdonald (1991:8) poses that it is unlikely that teachers who are working within the present system would be able, in a short space of time, to fulfil the ideal recommendations developed in a society impatient for transformation. It is both likely and possible that, *given the establishment of conditions in which change is supported and encouraged*, teachers will begin to develop new and transformed classroom practices. In-service teacher education and support, the establishment of collaborative networks of teachers working together toward their ideals, co-operative partnerships between these networks, 'outside' support services and support services within the system, appropriate and innovative teaching materials and opportunities for authentic participation will be vital elements

of this process. Macdonald (1991:8) calls this a 'transitional learning situation' and suggests that, in classrooms and schools where teachers have elected to become part of the process of change, the learning situation will, for a number of years, be in a state of transition and slow transformation.

## 6.6 CONCLUDING COMMENT

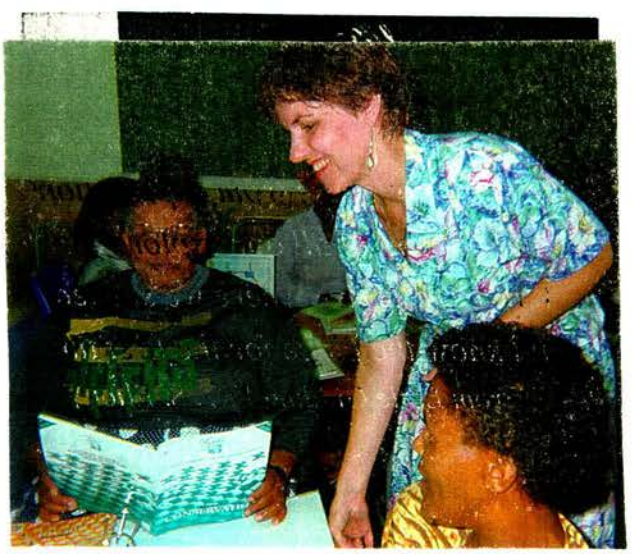
Like the conscientious pilgrim, I have visited many places of relevant interest on this research journey. I have, in this research project, wandered in several directions across the country in my search for understanding and better practice in environmental education. From each of my destinations, I have reviewed my travel logs, and noted my encounters with travellers along the way, reflecting on the most interesting stops I have made, and noting places to which I would wish to return. Along the way I have visited many travel shops and I have read a multitude of travel brochures as I endeavoured to collect a range of new travel information, which I have used to help me change directions and develop insights into this journey. I have, once again, mapped out new pathways and the time has now come for me to decide on my departure from my current destination point. I look toward the place from whence I have come and am tempted to turn eastward, or westward, to reach a new destination by a new road. I could, I now realise, have reached a different destination by a different road, but in retrospect would not change the experience and perspectives which I have gathered on this journey of change which I have only been able to represent partially through the writings in this research report.

Throughout the journey of inquiry reported here, the central thesis of this research report argues that in our quest for social transformation in environmental education, an ethic of *authentic participation* should form the core of our activities. Materials development, curriculum development, in-service teacher education and other processes which reflexively and critically search for collective solutions to the educational and environmental crises in local contexts should be supported by *an ethic of authentic participation*. A choice of *methods which are emergent and responsive*, an *orientation to process*, a *commitment to relatedness* with participants and a *concern for relevance* and *ongoing inquiry into the process of social transformation* should be key principles embodied by this ethic of authentic participation.

I, together with Dudley, (1992:342) agree with Polikinghorne's (1983) view that knowledge is a communal achievement. The development of the We Care Primary materials, curricula and INSET programmes and the commitment shown by teachers and others to join a collective search to find our way along pathways towards transformation in junior primary classrooms, provide evidence of educators working towards the development of quality education in the junior primary school phase. The growth in my own experience and perspectives on change, participation, emancipatory action research and critical theories in environmental education bear witness to my own learning in this participatory initiative. I have learned that we need to ask questions about what we have not thought to think; about what is most densely invested in our discourses and practice; and about what has been muted or repressed and gone unheard in representations of our practice (Dudley 1992). It seems that *it is this growth of questioning and ideas in participation that can energise a perpetual spiral of change, in oneself and in community. This creates a renewal of energy for ongoing involvement and reflexive review of the politics implicit in our critical practices, the shortcomings of the social theories we use to inform our practice, and of self and social transformation.*

*We shall not cease from exploration*
*And the end of all our exploration*
*Will be to arrive where we started*
*And know the place for the first time*
*(From Little Gidding V, T. S. Eliot )*

*At the still point of the turning world. Neither flesh nor fleshless;*
*Neither from nor towards; at the still point, there the dance is,*
*But neither arrest nor movement. And do not call it fixity,*
*Where past and future are gathered. Neither movement from nor towards,*
*Neither ascent nor decline. Except for the point, the still point,*
*There would be no dance, and there is only the dance.*
*I can only say, there we have been: but I cannot say where.*
*And I cannot say, how long, for that is to place it in time ...*
*... What might have been is an abstraction*
*Remaining a perpetual possibility*
*Only in a world of speculation ...*
*... Time past and time future*
*What might have been and what has been*
*Point to one end, which is always present.*



(From Burnt Norton I, T.S. Elliott)

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**APPENDIX 1:**

# AN INVENTORY OF DATA SOURCES AND ANALYTIC MEMOS

## DATA FILES:

### PHASE ONE: DEVELOPMENT, TRIALING AND TESTING OF WE CARE PRIMARY PILOT MATERIALS

DF1: 1987 We Care materials.

DF2: We Care Early Years draft materials.

DF3: Respondent Letters: evaluation of We Care Early Years materials.

DF4: Office Copy, pre-piloted version of We Care Early Years draft materials - first edit for the We Care Primary pilot materials.

DF5: We Care Early Years: reworked materials for B.Ed assignment - includes B.Ed assignment and evaluation of We Care Early Years draft materials.

DF6: 1988 - 1991: Information, SANF memos and correspondence relating to the development of the We Care Early Years materials and the development of the We Care Primary pilot materials.

DF7: We Care Primary pilot materials - (edited and re-developed from We Care Early Years). Printed and published by Share-Net: 1991.

DF8: Broad planning for phase one: goals, aims, workshop process, development of materials, dissemination of materials, outline of research process.

DF9: Research design and research proposal submitted to the Faculty of Education, Stellenbosch University, 1992.

DF10: History of We Care Primary project - includes Le Roux & Schreuder (1990) report on use of first We Care materials and other documentation.

DF11: Share-Net distribution lists for national distribution of We Care Primary pilot materials.

DF12: Trialing of We Care Primary pilot materials (Western Cape): workshop 1 - planning, gaining access, invitations.

DF13: Trialing of We Care Primary pilot materials (Western Cape): workshop 1 - content and overhead transparencies used for the workshop.

DF14: Trialing of We Care Primary pilot materials (Western Cape): teacher work done during workshop 1: needs for resource materials & issues / topic planning.

DF15: Trialing of We Care Primary pilot materials (Western Cape): workshop 1 - participants.

DF16: Trialing of We Care Primary pilot materials (Western Cape): workshop 2 - planning, information, questionnaire for focus group sessions.

DF17: Focus group interviews: workshop 2. Includes personal evaluation forms given to participants at the end of workshop 2.

DF18: Feedback questionnaires. Distributed with the We Care Primary pilot material. 58 questionnaires received from Western Cape and national sources.

DF19: Workshops 1 & 2: collective participant list (Western Cape).

DF20: Field notes and summary: Phase 1.

DF21: 1992: Diary and schedule.

DF22: 1992: Research Journal: Phase 1 workshops - Trialing and testing of We Care Primary pilot materials

DF23: 1992: Share-Net information on the We Care Primary project.

DF24: 1992: Project Report on phase one workshops. Identification of implications of the research project in 1992.

DF25: EEASA 1992 A.G.M. workshop on We Care Primary project.

DF26: 1992: Hewat Expo - We Care Primary project display.

DF27: 1992: Review of D.E.T. environment studies textbook and syllabus for Juta.

DF28: Western Cape INSET Policy Initiative meeting and We Care Primary project display.

DF29: 1992: Environmental Education lecture: B.Ed group at Stellenbosch University (on We Care Primary project).

DF30: How to run workshops: field notes and information.

**PHASE ONE: EUROPEAN RESEARCH TRIP: 1992**

DF31: WWF (International), WWF (UK) materials development research notes: 1992.

DF32: Reaching Out teacher in-service project: WWF - UK: 1992.

DF33: Learning through Landscapes project: UK: 1992.

DF34: SCCC (Scottish Consultative Council for the Curriculum) environmental education & curriculum development research notes: 1992.

DF35: Scottish Development Education Centre - participatory materials development project: 1992.

DF36: REEF (Regional Environmental Education Forum) networking project: Scotland 1992.

DF37: SEEC (Scottish Environmental Education Council) visit: 1992.

DF38: University of Surrey research visit and presentation on We Care Primary project: 1992.

DF39: Overseas trip - correspondence.

DF40: Field notes and diary: U.K. Research trip: 1992.

DF41: CARN (Classroom Action Research Network) Conference Notes: Worcester, U.K. 1992.

**PHASE TWO: RE-DEVELOPMENT OF WE CARE PRIMARY PILOT MATERIALS**

DF42: Publishing procedure and editing process.

DF43: Artwork and design.

DF44: We Care Primary project launch (1993). Planning, guest list, presentations, invitations.

DF45: Interviews and discussions: We Care Primary layout & design

**PHASE TWO: WORKING WITH THE WE CARE PRIMARY MATERIALS AND DISSEMINATION THROUGH OF THE MATERIALS THROUGH JUTA MARKETING**

DF46: Juta marketing staff workshops. SWOT analysis of current resource materials & how to work with the We Care materials.

DF47: Juta marketing staff reports.

DF48: Juta marketing staff interviews.

DF49: Juta - We Care Primary video planning and script.

DF50: Juta promotional video: "It's our world - We Care".

DF51: 50/50 Television programme planning and script.

DF52: 50/50 Television programme interviews and interview analysis.

DF53: 50/50 Filming videos - sent by the SABC.

DF54: 50/50 Television programme.

DF55: Juta - We Care Primary promotional workshops - planning, invitations, programmes.

DF56: Juta - We Care Primary promotional workshops: national data base of workshop participants.

DF57: Juta - We Care Primary promotional workshops: Western Cape data base of workshop participants.

DF58: 1993 Marketing and information brochures.

DF59: 1994 Juta marketing planning.

DF60: 1994: Follow up interviews: teachers, students, college lecturers.

**PHASE TWO: ONGOING WE CARE PRIMARY PROJECT PACK MATERIALS DEVELOPMENT**

DF61: Topic ideas.

DF62: Identifying environmental issues.

DF63: Activity development. Information and examples.

DF64: We Care Primary project pack development workshops: information, documents, planning, invitations.

DF65: We Care Primary project pack workshops: Matroosfontein Primary (the family).

DF66: We Care Primary project pack workshops: Rondebosch East Primary (the right choices).

DF67: We Care Primary project pack workshops: Maja pre-primary (water).

DF68: We Care Primary project pack workshops: Hout Bay & Wavecrest Primary (recycling).

DF69: We Care Primary project pack workshops: Eldene Primary (our street).

DF70: We Car Primary project pack workshops: Pieter Langeveld Primary.

DF71: We Care Primary project pack workshops: Eversdal Pre-primary (playgrounds).

DF72: We Care Primary project pack workshops: Melkbosstrand Pre-primary (the sea).

DF73: We Care Primary project pack workshops: Southern Suburbs Pre-primary group (peace, trees).

DF74: We Care Primary project pack drafts for trialing and testing.

DF75: We Care Primary project pack questionnaires (trialing of project packs).

DF76: We Care Primary project pack author support and guidelines for authors (1993, 1994, 1995).

DF77: Hilton Pre-primary (Kwazulu-Natal) We Care Primary project contributions.

DF78: School video: We Care Primary Recycling project: Sun Valley Pre-primary (recycling project started with the development of the Recycling project pack).

**PHASE TWO: CURRICULUM DEVELOPMENT USING THE WE CARE PRIMARY MATERIALS**

DF79: Departmental syllabi.

DF80: Workshop documents: children's learning.

DF81: Using the local environment as a resource for learning: information and examples.

DF82: Oakhill school - Integrated Studies whole school curriculum development. Workshop programmes, workshop content and workshop reports.

DF83: Northern Cape: We Care Primary curriculum development workshop report - Kimberley teachers' centre, August 1994.

DF84: Video - We Care Primary junior primary curriculum development workshop - Kimberley teachers' centre, August 1994.

DF85: Port Elizabeth We Care Primary curriculum development and marketing trip (1994).

DF86: Sun Valley Primary: Integrated Studies whole school curriculum development and curriculum development support.

DF87: Integrated Thematic Approach booklet for junior primary (developed in collaboration with Sun Valley teachers).

DF88: Colleges of Education workshops.

DF89: Media centre: Integrated Studies workshops for junior primary curriculum development (run with Jean Baxen: 1993, 1994).

DF90: Media centre workshops: materials generated through teacher participation.

DF91: Development and planning of an integrated studies teacher book for junior primary: a collection of workshop procedures and processes.

DF92: Integrated Studies curriculum workshop for Junior Primary subject advisors and college lecturers (presented with Jean Baxen): 1994.

DF93: 1994 teacher development week workshops - planning, schedules, teacher input and report.

DF94: Establishment of the Junior Primary Forum.

DF95: PRAESA conference and workshop presentation.

**PHASE TWO: GENERAL PROJECT DATA**

DF96: EEPUS information. A revised context for the We Care Primary project.

DF97: Juta / EEPUS planning of materials for development.

DF98: Workshop documents, background information and extension of ideas.

DF99: Running workshops and workshop planning.

DF100: Juta / EEPUS marketing workshops: general feedback questionnaires.

DF101: 1993 Planning.

DF102: 1994 Planning.

DF103: 1993 Diary and schedules.

DF104: 1994 Diary and schedules.

DF105: 1993, 1994 Field notes.

DF106: Publicity, press releases, published articles on the We Care Primary project.

DF107: Education Gazette submissions : approval of We Care Primary as departmental resource.

DF108: Interest in the We Care Primary project: EEASA 1993, 1994 - address list.

DF109: Action Research Network.

DF110: Materials Development Group.

DF111: Share-Net information.

DF112: Theme teaching information.

DF113: PREP (Primary Education Project - UCT) workshop report.

DF114: 1000 Schools Project - Western Cape networking.

DF115: Core Democratic Values, Tiblisi, Agenda 21 (core documents).

DF116: Field notes - workshop planning for phase two.

DF117: Phase two workshop documentation: information, handouts, teacher worksheets, extension of ideas.

**PHASE TWO (1995): IN-SERVICE TEACHER EDUCATION USING THE WE CARE PRIMARY MATERIALS**

DF118: 1994 Khayelitsha We Care Primary curriculum development workshop report.

DF119: 1995 Planning.

DF120: Khayelitsha pilot project proposal and planning.

DF121: Khayelitsha We Care Primary workshops: programmes.

DF122: Identification of environmental issues: 1995 Khayelitsha workshop.

DF123: Khayelitsha workshops: brainstorming skill development.

DF124: Khayelitsha We Care Primary workshops: activity analysis.

DF125: Khayelitsha workshop evaluation questionnaires: Looking back at our learning.

DF126: Khayelitsha workshop activities: feedback, evaluation forms, planning the way forward.

DF127: Khayelitsha workshop activities: syllabus brainstorming and activity development.

DF128: Khayelitsha workshop activities: planning schemes of work, junior primary phase planning and demarcation of planned work.

DF129: Khayelitsha Environment Studies Action Committee - names and addresses / minutes of meetings.

DF130: Khayelitsha Environment Studies Open Day (13 September 1995 - planning, invitations, procedure).

DF131: Khayelitsha We Care Primary INSET pilot project participant list.

DF132: Khayelitsha Workshop report and evaluation form (22 - 23 August 1995).

DF133: List of volunteer teachers for becoming involved as trainers in 1996 in-service training.

DF134: Khayelitsha We Care Primary INSET pilot project workshop feedback report (from all workshops held in 1995).

DF135: CENEDUS proposal for the establishment of teacher education unit.

DF136: INSET Policy Initiative documents and workshop proceedings.

DF137: Publicity and marketing: We Care Primary project - 1995.

DF138: 1995 Integrated Studies INSET workshop for subject advisors (with Jean Baxen for Western Cape Education Department).

DF139: Workshop correspondence: Northern Transvaal Province Department of

Education

DF140: Northern Transvaal Province: We Care Primary INSET curriculum development workshop (September 1995).

DF141: Interim Curriculum for Environment Studies: core interim syllabus (Department of National Education) and Western Cape interim curriculum - 1995.

DF142: We Care Primary: syllabus support guide for teachers.

**PHASE ONE, TWO AND THREE: GENERAL PROJECT DATA**

DF143: General correspondence.

DF144: Project slides.

DF145: Photographs and negatives.

DF146: Workshop programmes: 1993, 1994, 1995.

DF147: Annual Reports and Budgets: 1992, 1993, 1994 compiled for SANF and the Centre for Education Development, University of Stellenbosch.

DF148: Graphical representation and other documentation describing the project extent (phases one to three).

DF149: File of overhead projector transparencies: generated for workshops (1992 - 1994).

DF150: Wildlife Society workshop: We Care Primary project story (January 1995).

DF151: Radio Interview preparation (23 August 1995).

DF152: EEASA'96: Paper and presentation.

DF153: We Care Senior Primary planning.

DF154: We Care Zimbabwe: adapted materials and project information.

DF155: Samples of pupils' work.

DF156: Environmental Education Little Library materials development workshop (June 1995).

DF157: EEASA Conferences: 1992, 1993, 1995.

DF158: Published We Care Primary materials: file and first seven booklets - Conservation, Place, Change, Adaptation, Diversity, Interrelationships, Cause and Consequence.

DF159: Published We Care Primary project packs materials: project packs - Our Street, The Right Choices, Water, Recycling, Families, Peace.

DF160: Project information and project documents: Phases one, two, three.

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# ANALYTIC MEMOS:

### PHASE ONE DATA FILES

AM1: Analysis of respondents' letters: evaluation of We Care Early Years materials.

AM2: 1988 - 1991 - Participation in materials development - an analysis of DF 6.

AM3: Critique of 1992 research proposal - reflection in retrospect.

AM4: Summary of national distribution of We Care Primary pilot materials through Share-Net.

AM5: Need for resource materials (data from workshop 1) - an analysis of DF14.

AM6: Environmental issues as focus for planning, using the We Care Primary pilot material concepts - an analysis of teachers' work (data from workshop 1) - an analysis of DF14.

AM7: Reflections on workshop 1 (trialing and testing of We Care Primary pilot materials).

AM8: Analysis of workshop 2: focus group interviews.

AM9: Analysis of personal evaluation forms: workshop 2.

AM10: Broad analysis of feedback questionnaires - an analysis of DF18.

AM11: Summary of field notes and phase one workshops.

AM12: Analysis of 1992 Journal: significant aspects for case report.

AM13: Analysis of 1992 project report: significant aspects for case report and thesis of participation in materials development.

AM14: Analysis of implications of other project activities such as Hewat Expo, IPI display, B.Ed lecture.

AM15: Reflections on running workshops.

**EUROPEAN RESEARCH TRIP DATA FILES**

AM16: Pertinent information about participatory materials development projects encountered on the European research trip.

AM17: List of interesting projects visited - worth following up on.

AM18: General feelings: post-reaching out workshop (last weekend in U.K.).

AM19: Analysis and synthesis of CARN conference - implications for further research.

**REDEVELOPMENT OF THE WE CARE PRIMARY PILOT MATERIALS**

AM20: Some emerging tensions: participatory materials development and the commercial publishing industry.

AM21: Critique of layout and page design of We Care Primary materials (re-developed).

**THE DISSEMINATION AND USE OF THE WE CARE PRIMARY MATERIALS AND THE JUTA MARKETING PROCESS DATA FILES**

AM22: Analysis of SWOT analysis schedules from representatives workshop.

AM23: Analysis of Juta marketing staff reports.

AM24: Analysis of Juta marketing staff interviews.

AM25: Juta video, television programme - comments on the influence, impact, value of this resource.

AM26: Analysis of 50/50 video interviews and tapes.

AM27: Analysis of follow up interviews: schools, colleges, college lecturers.

**DEVELOPMENT OF PROJECT PACKS DATA FILES**

AM28: Analysis of issues identified by teachers.

AM29: Activity development: some observations and issues arising out of workshop materials.

AM30: The process of developing a We Care Primary project pack: common threads emerging from the project pack workshops.

AM31: Trialing and testing the draft We Care Primary project packs: analysis of questionnaires and follow-up interviews.

AM32: Authors writing the text for the We Care Primary project packs: some thoughts and observations.

AM33: Topics for We Care Primary project packs: how to choose topics.

## CURRICULUM DEVELOPMENT USING THE WE CARE PRIMARY MATERIALS

AM34: Summary of teachers' thoughts on how children learn (drawn from workshop materials).

AM35: Some thoughts on the use of the local environment as a resource for learning.

AM36: A summary of the Oakhill story and an analysis of significant aspects of the Oakhill story for whole school curriculum development.

AM37: A summary of the Northern Cape We Care Primary curriculum development workshop and an analysis of significant aspects for curriculum development using resource materials as a focus.

AM38: A summary of the Sun Valley whole school change process as observed from an occasional support role.

AM39: A summary of the more significant aspects of the media centre Integrated Studies curriculum development workshops and a description of the role of the We Care Primary materials as support for this process.

AM40: A summary of the teacher development week workshops. Implications for INSET.

AM41: A summary of the different approaches to environment studies followed by schools in the Western Cape.

AM42: Summary of PRAESA conference and significant aspects of the environmental education workshop.

## GENERAL PROJECT INFORMATION RELEVANT TO PHASE TWO OF THE WE CARE PRIMARY PROJECT

AM43: Establishment of EEPUS: Implications for the We Care Primary project.

AM44: Partnership with Juta: Implications for the We Care Primary project.

AM45: Analysis of the Juta/ EEPUS general project questionnaires.

AM46: Analysis and synthesis of 1993 & 1994 field notes.

AM47: Impact and significance of publicity and press releases on project development.

AM48: Significance of submission and approval of We Care Primary materials by education departments.

AM49: Significance of the Action Research Network and the implications of academic networking on the We Care Primary project.

AM50: Significance of the Materials Development Forum and the implications of materials development networking for the We Care Primary project.

AM51: Share-Net and supporting resources: materials development network and networking materials development.

AM52: Local networking: 1000 Schools project and EEASA Western Cape.

AM53: Analysis of workshop process: reflections on running workshops.

AM54: Reflections on project management vs research management (phase two).

AM55: Reflections on working partnerships.

## IN-SERVICE TEACHER EDUCATION USING THE WE CARE PRIMARY MATERIALS

AM56: Review on the planning of the pilot project and the need to establish constructive partnerships with Education Departments.

AM57: Reflection on issues identified at the Khayelitsha workshops.

AM58: Analysis of workshop activities and how We Care Primary materials were used.

AM59: Analysis and reflections on the workshop process: looking at our learning questionnaire.

AM60: Reflections on the establishment of the Khayelitsha Environment Studies Action Committee and volunteers to become trainers for 1996 project.

AM61: Reflection on workshop attendance during the pilot programme workshops.

AM62: Reflections on Environment Studies Open Day held in Khayelitsha on 13 September 1995.

AM63: CENEDUS proposal for the development of a junior primary environmental education teacher education unit.

AM64: INSET issues and status: implications for materials and materials development.

AM65: Planning for Northern Transvaal Province We Care Primary curriculum development pilot project: some lessons learned from the Khayelitsha We Care Primary INSET pilot project.

AM66: Reflections on interim curriculum for environment studies - curriculum development process and use of curriculum.

AM67: Implications of the We Care Primary syllabus guide for the We Care Primary materials development process.

**GENERAL PROJECT DATA (PHASES ONE, TWO AND THREE)**

AM68: Reflections on using photography as a data source.

AM69: An overview of the project: development and growth, patterns and trends, role of resource materials.

AM70: Pupils' work and involvement with the learners.

AM71: Comments on the publishing process and the implications for participatory resource materials development.

AM72: Significance of EEASA conferences to the We Care Primary project.

AM73: READ Little Library environmental education materials development workshop. Reflections, comments and lessons for We Care Primary materials development.

**GENERAL ANALYTIC MEMOS**

AM74 Academic networking.

AM75 Local networking.

AM76 Materials development networking.

# APPENDIX 2:

# AN INVENTORY OF THE CASE RECORD CONTENTS (Volume 2)

***The items in the case record have been ordered according to appearance in the main text.***

## CHAPTER 1

CR1.1 1991 Research Proposal.

## CHAPTER 2

CR2.1 The Tbilisi Principles of environmental education.

CR2.2 The Treaty on Environmental Education for Sustainable Societies and Global Responsibility.

CR2.3 Soutter, R. Southern African Nature Foundation memo ZA235, 21-08-1991.

CR2.4 Soutter, R. Letter to O'Donoghue, 21-04-1988.

CR2.5 O'Donoghue, R. Letter to Lotz, June 1995.

CR2.6 Schreuder, D. 28-02-1990. The We Care educational resource package - reflections on some developments.

CR2.7 Soutter, R. 17-05-1995 Letter inviting an evaluation of the WCEY materials.

CR2.8 Analytic memo (AM1) detailing the responses received for the evaluation of the WCEY materials.

CR2.9 Example of suggestions made in a 1991 B.Ed assignment, recommending ways in which the WCEY materials could be reworked.

CR2.10 Taylor, J. 11-11-1991. Progress report to SANF on the We Care Primary project.

CR2.11 Schreuder, D. 22-09-1991. Letter to confirm University of Stellenbosch (my role) in the We Care Primary research project.

CR2.12 Examples of activities from the We Care Primary materials which encourage the development of process skills for literacy and numeracy.

CR2.13 Challenges for transforming junior primary curricula in the Western Cape and recommendations for further actions in this regard. (Lotz & Baxen workshop report, February 1994).

CR2.14 Guiding Principles of the We Care Primary materials development project.

CR2.15 Table indicating different orientations to education. From Kemmis, Cole & Suggett (1983).

**CHAPTER 3**

CR3.1 Collaborative planning workshop (planning the We Care Primary pilot materials): Umgeni Valley, December 1991.

CR3.2 Letter and information accompanying the We Care Primary pilot materials.

CR3.3 Concept map indicating the seven concepts of the We Care Primary project and the structure of the We Care Primary booklets.

CR3.4 Focus Group interview schedule (for phase one follow up workshops).

CR3.5 Interview schedule indicating follow up interviews (September - November 1994).

CR3.6 Different interview schedules.

CR3.7 Sample interview transcripts.

CR3.8 Questionnaire sent out with the We Care Primary pilot materials.

CR3.9 Broad analysis of the We Care Primary pilot feedback questionnaire.

CR3.10 Data analysis categories and themes.

CR3.11 Workshop invitations for phase one workshops.

CR3.12 Planning of phase one workshops, including workshop programme.

CR3.13 1992 Appointment schedule (indicates workshops, meetings and discussions).

CR3.14 Planning for the Rhenish Primary workshops (longer workshop series).

CR3.15 Personal communication list (taken from 1992 project report).

CR3.16 Alternative supporting materials cross referenced in the We Care Primary pilot materials.

CR3.17 Journal entry reflecting the process of reflection-in-action, informing the planning for follow-up workshops.

CR3.18 Analysis of Focus Group Interviews (identification of trends).

**CHAPTER 4**

CR4.1 Priorities for materials: needs identified by teachers in phase one workshops.

CR4.2 Environmental issues identified by teachers as possible focus for curriculum planning and ideas development.

CR4.3 Activity from the We Care Primary materials and the We Care Primary pilot materials, indicating how the activities were reworked and changed.

CR4.4 Ongoing identification of environmental issues, indicating the socio-economic and socio-political problems facing young learners.

CR4.5 Planning a curriculum theme, using an environmental issue as focus. This planner indicates the use of the We Care Primary materials (and other resources) as support.

CR4.6 Curriculum planning using the We Care Primary concepts as focus.

CR4.7 Sample We Care Primary activities showing the emphasis on competency development (process skills and problem solving skills).

CR4.8 Journal entry illustrating the value of local networking and critical engagement with NGO's for the project.

CR4.9 Journal entry describing contact with the CED environment studies project, indicating the important role of teachers as INSET providers.

CR4.10 EEPUS brochure announcing the establishment of EEPUS.

CR4.11 Juta / EEPUS planning schedule, and brochure indicating long term plans for the We Care Primary project.

CR4.12 We Care Primary materials launch. Invitation and press coverage.

CR4.13 Juta Marketing staff workshop: SWOT analyses.

CR4.14 Juta / EEPUS marketing workshop programme.

CR4.15 Juta Marketing staff reports on the marketing of the We Care Primary materials.

CR4.16 Submission procedures for approval of the We Care Primary materials.

## CHAPTER 5

CR5.1 Comments submitted in preparation for revisions of national core interim syllabus. Western Cape Interim Syllabus aims, principles and document framework.

CR5.2 Curriculum development workshop report: PRAESA National Primary Education Conference, July 1994.

CR5.3 Junior Primary Forum Newsletter indicating interdepartmental networking, involvement and transformation projects for junior primary.

CR5.4 Subject advisor workshops: programmes.

CR 5.5 Analytic Memo describing the tensions between participatory materials development and commercial publishing.

CR 5.6 Materials Development Group: a summary of activities and participants (including EEPUS) for an Inset Policy Initiative meeting.

CR5.7 Core Democratic Values (Fien 1993).

CR5.8 Letter sent to teachers (who had participated in phase one of the project), inviting further participation in ongoing workshops for phase two of the project.

CR5.9 Diary of phase two We Care Primary project meetings and workshops (1993, 1994, 1995).

CR5.10 Sharing of rough draft of a 'story' chosen for this research report.

CR5.11 Example of a project pack framework, generated through discussion, reflection and interaction around a local environmental issue, during a We Care Primary materials development workshop.

CR5.12 Some sample attendance lists indicating the expanding network of schools participating in the We Care Primary Materials development process.

CR5.13 Perspectives on resource materials development emerging from the We Care Primary materials development process.

CR5.14 Index page of a booklet written with teachers at Sun Valley Primary school and their daily timetable, developed to accommodate a changed view of teaching and learning, and changed infra structural conditions.

CR5.15 Sample workshop programmes illustrating a concern for- and engagement with broader educational issues.

CR5.16 Topics chosen by teachers at different schools in the Western Cape which were used as themes for the We Care Primary project packs.

CR5.17 Letter and questionnaire inviting teachers to trial and test the We Care Primary draft project packs.

CR5.18 Reply to the invitation sent to schools to participate in ongoing We Care Primary materials development workshops.

CR5.19 Group feedback indicating the aspects to consider to compile additional resource materials.

CR5.20 Programmes for the teacher workshops co-ordinated by the Juta marketing staff.

CR5.21 Teacher comments on the We Care Primary project pack concept.

CR5.22 Critique of the layout and page design of the We Care Primary materials.

CR5.23 Objectives and Introduction pages of 'The Right Choices' project pack.

CR5.24 Comparison of artwork: We Care Primary materials We Care Primary project packs

CR5.25 Copy of resource page in project pack/s.

CR5.26 Outline plan devised by the teachers for the 'Recycling' project pack.

CR5.27 Recycling song developed by a teacher at S5.

CR5.28 Letter from the Principal, S5 after doing a talk on We Care Primary project in Hartenbos for a pre-primary congress.

CR5.29 Activity development using the We Care Primary Project materials as a supporting resource.

CR5.30 Planning a cycle of inservice teacher education workshops in collaboration with the WCED education department educational planner.

CR5.31 Using environmental topics as focus for integration across the curriculum.

CR5.32 Index page of the We Care Primary teachers book.

CR5.33 Back cover of the We Care Primary project packs showing the different We Care Primary Booklets.

CR5.34 Observations on the We Care Primary participatory authors project.

CR5.35 Rationale for Integrated Studies workshops.

CR5.36 Principles of activity development .

CR5.37 Evaluation samples from the media centre workshops.

CR5.38 Making topic choices for junior primary environment studies.

CR5.39 Recommendations from the Khayelitsha workshop (from workshop report, 18-08-1994).

CR5.40 Feedback from the Port Elizabeth workshop (from workshop report, 06-06-1994).

CR5.41 Environmental topics for a reconstructed environment studies syllabus (extract from workshop report, 18-08-1994).

CR5.42 Planning the 'Way Forward' for ongoing We Care Primary INSET workshops with teachers (17-08-1994).

CR5.43 Khayelitsha pilot project workshop programmes (1995).

CR5.44 A selection of curriculum development work done during the We Care Primary INSET workshops.

CR5.45 Environmental Studies Open Day planning, information and invitation.

CR5.46 Khayelitsha Environment Studies Action Committee.

CR5.47 Extract from project extension proposal (CENEDUS).

CR5.48 List of teacher volunteers to become support teachers for the CENEDUS project extension and for INSET for the introduction of the new interim syllabus.

CR5.49 Dates and schedule for the 1995 We Care Author Support Programme.

CR5.50 We Care Primary syllabus guide (to accompany the 1995/6 core national syllabus).

CR5.51 Examples of pupil materials included in the We Care Primary project packs.

CR5.52 Submission letter to the education department for approval of the We Care Primary materials. We Care Primary materials (approved by the ex-HoR).

CR5.53 Media coverage of the We Care Primary project.